

U.S. DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

**Estimates of Technically Recoverable Petroleum Resources
for Continuous-Type (Unconventional) Plays
in Sandstones, Shales, and Chalks
on Federal Lands of the Conterminous United States**

by

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**This report is preliminary and has not been reviewed for conformity with U.S.
Geological Survey editorial standards and stratigraphic nomenclature.**

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INTRODUCTION

This report gives estimates of technically recoverable petroleum resources for continuous-type (unconventional) plays in sandstones, shales, and chalks on Federal Lands of the conterminous United States. Continuous-type accumulations may have spatial dimensions approaching those of plays and cannot be represented in terms of discrete, countable entities delineated by downdip hydrocarbon/water contacts, as are conventional accumulations. These continuous-type plays are in sandstones, shales, chalks, and coals. Continuous-type plays in coals (coalbed gas) on Federal Lands are treated in a separate report (Crovelli and Nuccio, 1997). For the purposes of this report, Federal Lands are considered to be surface or subsurface lands owned or managed by Federal agencies, or in cooperation with State or private interests. This specifically excludes Indian and Native lands, even where administered in trust by the United States. The Federal Lands estimates herein are derived as a portion of the continuous-type plays assessed in the USGS 1995 National Assessment (Gautier and others, 1995; U.S. Geological Survey National Oil and Gas Resource Assessment Team, 1995).

The U.S. Geological Survey periodically makes appraisals of the oil and gas resources of the Nation. In its 1995 National Assessment the onshore areas and adjoining State waters of the Nation were assessed. The basic assessment unit was the play. Forty-seven continuous-type plays in sandstones, shales, and chalks were assessed as part of the 1995 National Assessment (Crovelli and Balay, 1995; Schmoker, 1995; Schmoker and others, 1995; Schmoker and Oscarson, 1995). A fractal lognormal percentage assessment was also made of these continuous-type gas plays (Crovelli and others, 1995). Another 15 continuous-type plays were defined but were not quantitatively assessed, due to lack of data.

ASSESSMENT

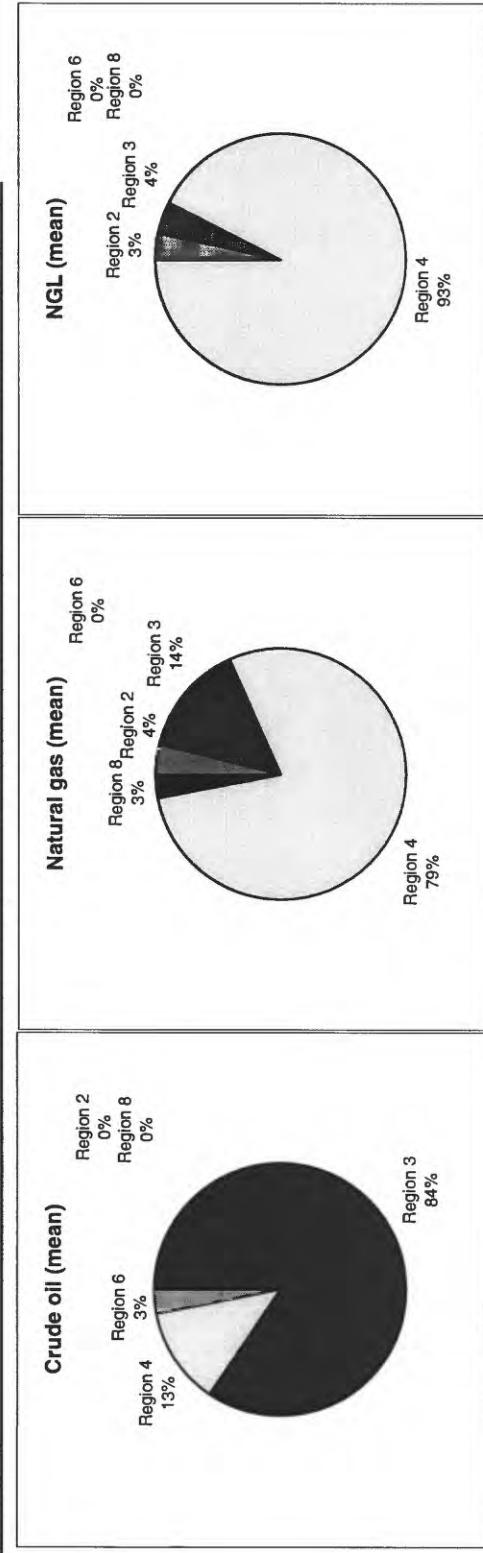
Federal Lands percentages were estimated for the 47 assessed continuous-type plays (Appendix A). These land percentages were assumed to represent the fractions of continuous-type oil and gas resources which are on Federal Lands. Five of the continuous-type plays contained no Federal Lands.

A summary of estimates of technically recoverable petroleum resources for continuous-type (unconventional) plays in sandstones, shales, and chalks on Federal Lands of the conterminous United States for the regions and nation is given in table 1 with corresponding embedded pie charts. The UNCLE (unconventional energy) system (Crovelli and Balay, 1995) was used to calculate estimates of technically recoverable oil and gas resources in those parts of the continuous-type plays on Federal Lands. The UNCLE system is an analytic probabilistic methodology developed for assessing unconventional petroleum resources. The 42 non-zero percentages were applied to their respective continuous-type play estimates using the UNCLE computer program (Appendix B). Nine of the plays have two scenario assessments each with corresponding

Table 1. Estimates of technically recoverable petroleum resources for continuous-type (unconventional) plays in sandstones, shales, and chalks on Federal Lands of the conterminous United States for the regions and nation.

[Fractile values (F95, F5) are not additive. F95 represents a 19 in 20 chance and F5 represents a 1 in 20 chance of the occurrence of at least the amount tabulated. Natural gas includes both non-associated and associated-dissolved gas. NGL, natural gas liquids.]

Area	Crude oil (billion barrels)			Natural gas (trillion cubic feet)			NGL (billion barrels)		
	Mean	F95	F5	Mean	F95	F5	Mean	F95	F5
Region 2--Pacific Coast	0	0	0	4.88	1.12	12.4	0.05	0.01	0.12
Region 3--Colorado Plateau and Basin and Range	0.27	0.11	0.51	18.31	12.35	25.82	0.06	0.03	0.08
Region 4--Rocky Mountains and Northern Great Plains	0.04	0.02	0.06	100.06	49.08	175.58	1.34	0.63	2.4
Region 6--Gulf Coast	0.01	0.01	0.02	0.18	0.12	0.27	0	0	0.01
Region 8--Eastern	0	0	0	3.64	1.94	6.15	0	0	0
Nation	0.32	0.15	0.57	127.08	72.38	202.36	1.45	0.71	2.55



scenario probabilities. In order to combine the pairs of scenarios to get single play estimates, the scenario combinations were generated by the UNCLE-SC computer program (Appendix C). The play estimates were aggregated to obtain megaplay estimates (Appendix D), megaplay estimates were aggregated for province estimates (Appendix E), province estimates were aggregated for region estimates (Appendix F), and region estimates were aggregated for nation estimates (Appendix G). All of the continuous-type oil and gas aggregations were performed with the UNCLE-AG computer program. The aggregation scheme for aggregating the various levels is displayed in Appendix H. The play names and numbers are given in Appendix I.

ACKNOWLEDGMENT

The authors wish to gratefully acknowledge Richard H. Balay at Metropolitan State College of Denver for assisting in a printing modification of the UNCLE software system.

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APPENDIX A

**Percentage of Federal land in the continuous-type oil and gas plays in sandstones,
shales, and chalks of the USGS 1995 National Assessment**

Percentage of Federal land in the continuous-type plays (in sandstones, shales and chalks) of the USGS 1995 National Assessment. Play names are provided in Appendix I; abbreviated play names are used in Appendix B. NA means the play was defined but not quantitatively assessed.

Region; (Province)	Play No.	% Federal Land
Region 2--Pacific Coast		
(Western Oregon-Wash.)	412	NA
(Eastern Oregon-Wash.)	503	40
(Los Angeles Basin)	1408	NA
Region 3--Colorado Plateau and Basin and Range		
(Uinta-Piceance Basin)	2007	55
	2009	35
	2010	55
	2015	80
	2016	75
	2018	60
	2020	2
(Paradox Basin)	2103	65
(San Juan Basin)	2205	40
	2208	40
	2209	40
	2211	40
Region 4--Rocky Mountains and Northern Great Plains		
(Montana Thrust Belt)	2703	NA
(Central Montana)	2804	10
	2810	20
	2811	20
	2812	15
(Williston Basin)	3110	40
	3111	10
	3112	5
	3113	2
(Powder River Basin)	3308	NA
	3311	NA
(Big Horn Basin)	3404	NA
(Wind River Basin)	3505	NA
(S.W. Wyoming)	3740	75
	3741	80
	3742	75
	3743	80
	3744	65
(Park Basins)	3803	NA
(Denver Basin)	3904	0
	3906	5
	3911	NA
	3920	0
	3921	5

Percentage of Federal land in continuous-type plays---continued.

Region; (Province)	Play No.	% Federal Land
Region 5--West Texas and Eastern New Mexico (Bend Arch-Fort Worth Basin)	4503	NA
Region 6--Gulf Coast (Western Gulf)	4747	0
	4748	0
	4749	7
(Louisiana-Miss. Salt Basins)	4923	2.5
Region 7--Midcontinent (Anadarko Basin)	5811	NA
Region 8--Eastern (Michigan Basin)	6319	0
	6320	10
(Illinois Basin)	6407	5
(Cincinnati Arch)	6604	3
(Appalachian Basin)	6728	3
	6729	3
	6730	1
	6731	NA
	6733	5
	6734	5
	6735	5
	6736	NA
	6740	3
	6741	3
	6742	3
	6743	NA

APPENDIX B

Play estimates of technically recoverable petroleum resources for continuous-type (unconventional) plays in sandstones, shales, and chalks on Federal Lands of the conterminous United States.

[Printouts are arranged by play number. The first page of a play printout consists of the geologic data input, including abbreviated play names and numbers that correspond to Appendix A, play type (oil or gas), play probability (0-1), success ratio (0-1), scenario (well spacing), geologic variables (EUR and number of untested cells distributions), and estimated percent of resource in subplay (Federal land). Full play names and numbers are given in Appendix I. The second page of the printout consists of the output of estimated petroleum resources for the Federal land (mean, standard deviation, and fractiles). For each play there may be two printouts, one for each scenario. Scenario combinations are located in Appendix C.]

UNCLE 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\WASH-ORE\503-80.LIS (from 503-80.PLA) 8-Jul-1997 14:58:18 Run No. 1

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Columbia Basin, 503	Eastern Washington & Oregon	500	Law	7-11-94

Play Type	Play Probability	Success Ratio	Scenario
Gas	1.000	0.700	1 of 2 scenarios; 80 acres; 0.7 prob.; Crovelli
Geologic Variables		F100	F95
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.05500	0.90000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	9.50000	(10.6666)	(0.00000)
Number of Untested Cells	6000	(6333)	(11.8333)
		(6667)	13.0000
		7000	(14.1250)
			(16.0000)
			17.5000
			(18024)
			(36397)
			51096

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^-6 CF	Estimated % of resource in subplay
0.000000	10.000	40.00000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Resource	Resource	Resource	NGL
	# Cells			Oil	NA Gas	AD Gas	Gas/HC	NA Gas
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.7000	0.0000	0.7000	0.7000
Gas Cell Depth	13.0989	1.70211	Cond. Play Prob.	0.0000	1.0000	0.0000	1.0000	0.0000
			Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000			
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Columbia Basin, 503 C:\UNCONV\FEDCONTI\WASH-ORE\503-80.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

No. Prod. Untested Cells	9851.54	7536.66	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.56845	0.63951	.....	.....	.....	.....	.....
Cond. Play Potential	5600.11	4284.69	1455.97	2813.67	4447.63	7030.45	13586.4
Uncond. Play Potential	5600.11	4284.69	1455.97	2813.67	4447.63	7030.45	13586.4

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁹ CF)

No. Prod. Untested Cells	9851.54	7536.66	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.56845	0.63951	.....	.....	.....	.....	.....
Cond. Play Potential	5600.11	4284.69	1455.97	2813.67	4447.63	7030.45	13586.4
Uncond. Play Potential	5600.11	4284.69	1455.97	2813.67	4447.63	7030.45	13586.4

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

No. Prod. Untested Cells	9851.54	7536.66	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00568	0.00640	.....	.....	.....	.....	.....
Cond. Play Potential	56.0011	42.8469	14.5597	28.1367	44.4763	70.3045	135.864
Uncond. Play Potential	56.0011	42.8469	14.5597	28.1367	44.4763	70.3045	135.864

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Columbia Basin, 503	Eastern Washington & Oregon	500	Law	7-11-94

Play Type	Play Probability	Success Ratio	Scenario
Gas	1.000	0.800	2 of 2 scenarios; 160 acres; 0.3 prob.; Crovelli
Geologic Variables	F100	F95	
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	F25
NA Gas EUR* (10^9 CF)	0.00000	0.05500	F05
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	F0
Gas Cells Depth (10^3 Ft)	9.50000	(10.6666)	Cutoff
Number of Untested Cells	3000	(3167)	
		(3333)	
		(3500)	
		(9012)	
		(18199)	
		25548	

* EUR = Estimated Ultimate Recovery

B4

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
0.0000000	10.000	40.00000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL
	# Cells	7036.57	5383.32	Oil	AD Gas
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has Cond. Play Prob.	0.0000 0.8000	NA Gas Gas/HC Total
Gas Cell Depth	13.0989	1.70211	Uncond. Play Prob.	0.0000 1.0000	0.8000 0.0000 0.8000
			Prob. Exceed Cutoff	0.0000 1.0000	0.0000 1.0000 1.0000
			Play Potential Cutoffs	0.0000 0.0000	0.0000 0.0000 0.0000

UNCONVENTIONAL RESOURCES for Columbia Basin, 503 C:\UNCONV\FEDCONTI\WASH-ORE\503-160.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

No. Prod. Untested Cells	5629.26	4306.79	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.56845	0.63951	.....	.....	.....	.....	.....
Cond. Play Potential	3199.95	2448.67	831.799	1607.58	2541.28	4017.27	7764.00
Uncond. Play Potential	3199.95	2448.67	831.799	1607.58	2541.28	4017.27	7764.00

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁹ CF)

No. Prod. Untested Cells	5629.26	4306.79	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.56845	0.63951	.....	.....	.....	.....	.....
Cond. Play Potential	3199.95	2448.67	831.799	1607.58	2541.28	4017.27	7764.00
Uncond. Play Potential	3199.95	2448.67	831.799	1607.58	2541.28	4017.27	7764.00

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

No. Prod. Untested Cells	5629.26	4306.79	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00568	0.00640	.....	.....	.....	.....	.....
Cond. Play Potential	31.9995	24.4867	8.31799	16.0758	25.4128	40.1727	77.6400
Uncond. Play Potential	31.9995	24.4867	8.31799	16.0758	25.4128	40.1727	77.6400

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Piceance Mesaverde Williams Fork, 2007	Uinta-Piceance	20	C. Spencer	8/25/94

Play Type	Play Probability	Success Ratio	Scenario	
Gas	1.000	0.550	1 scenario; 160 acres; Crovelli	
Geologic Variables	F100	F95	F75	F50
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	0.00000	(0.00000)
NA Gas EUR* (10^9 CF)	0.00000	0.15000	0.55000	0.90000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	0.00000	(0.00000)
Gas Cells Depth (10^3 Ft)	5.50000	(6.16666)	(6.83333)	(8.26666)
Number of Untested Cells	5000	(6621)	(8648)	(9864)

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
0.0000000	5.0000	55.00000

B6

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

	Mean	Std. Dev.	Resource		NGL	
Cond. # Cells	9637.82	1707.16	Oil	NA Gas	AD Gas	Gas/HC
# Cells	9637.82	1707.16				
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.5500	
Gas Cell Depth	7.55500	0.94422	Cond. Play Prob.	0.0000	1.0000	0.5500
			Uncond. Play Prob.	0.0000	1.0000	0.0000
			Prob. Exceed Cutoff	0.0000	1.0000	1.0000
			Play Potential Cutoffs	0.0000	0.0000	0.0000
					0.0000	0.0000

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UNCONVENTIONAL RESOURCES for Piceance Mesaverde Williams Fork, 2007 C:\UNCONV\FEDCONT\PICEANCE\2007.LIS

Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁻⁶ BBL)							
No. Prod. Untested Cells							
0.00000	0.00000	0	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁻⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod. Untested Cells							
5300.80	940.213	.....	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.50531	0.29221	1973.79	2341.83	2637.32	2970.09	3523.90
Cond. Play Potential	2678.56	475.577	1973.79	2341.83	2637.32	2970.09	3523.90
Uncond. Play Potential	2678.56	475.577	1973.79	2341.83	2637.32	2970.09	3523.90

ASSOCIATED-DISSOLVED GAS
(10⁻⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod. Untested Cells							
0.00000	0.00000	0	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁻⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod. Untested Cells							
5300.80	940.213	.....	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.50531	0.29221	1973.79	2341.83	2637.32	2970.09	3523.90
Cond. Play Potential	2678.56	475.577	1973.79	2341.83	2637.32	2970.09	3523.90
Uncond. Play Potential	2678.56	475.577	1973.79	2341.83	2637.32	2970.09	3523.90

LIQUIDS in NONASSOC. GAS
(10⁻⁶ BBL)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod. Untested Cells							
5300.80	940.213	.....	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00253	0.00146	.....	.....	.....	.....	.....
Cond. Play Potential	13.3928	2.37789	9.86896	11.7091	13.1866	14.8504	17.6195
Uncond. Play Potential	13.3928	2.37789	9.86896	11.7091	13.1866	14.8504	17.6195

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Creataceous Sol-folkwood Fractured 2009	Winter-Bictonian	20	S. Connor	7/04

Play Type	Play Probability	Success Ratio	Scenario			Cutoff
			F100	F95	F75	
Oil	1.000	0.010				
			1 scenario; 40 acres; Crovelli			
Geologic Variables						
Oil EUR*	(10^6 BBL)	0.00000	0.00280	0.02000	0.30000	0.70000
NA Gas EUR*	(10^9 CF)	0.00000	(0.00000)	(0.00000)	(0.00000)	(0.00000)
Oil Cells Depth	(10^3 Ft)	0.50000	(1.26666)	(2.03333)	2.80000	(4.93333)
Gas Cells Depth	(10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)
Number of Untested Cells		10000	(22522)	(38174)	47565	(51710)
					F05	F0

* FTIB = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10 ⁶ CF	Estimated % of resource in subplay
300 0000	0 0000	35 000000

GEOLLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

UNCONVENTIONAL RESOURCES for Cretaceous Self-sourced Fractured, 2009

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Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	436.618	111.512
Est. Ultimate Recovery	0.07520	0.09895	.....	.....	.....	.....	.....
Cond. Play Potential	32.8326	8.63654	20.7484	26.6690	31.7524	37.8048	48.5923
Uncond. Play Potential	32.8326	8.63654	20.7484	26.6690	31.7524	37.8048	48.5923

NONASSOCIATED GAS

(10⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
NONASSOCIATED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

ASSOCIATED-DISSOLVED GAS

(10⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
ASSOCIATED-DISSOLVED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	436.618	111.512	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.02256	0.02968	.....	.....	.....	.....	.....
Cond. Play Potential	9.84977	2.59096	6.22453	8.00070	9.52572	11.3414	14.5777
Uncond. Play Potential	9.84977	2.59096	6.22453	8.00070	9.52572	11.3414	14.5777

TOTAL GAS

(10⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
TOTAL GAS (10 ⁹ CF)							
No. Prod. Untested Cells	436.618	111.512	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.02256	0.02968	.....	.....	.....	.....	.....
Cond. Play Potential	9.84977	2.59096	6.22453	8.00070	9.52572	11.3414	14.5777
Uncond. Play Potential	9.84977	2.59096	6.22453	8.00070	9.52572	11.3414	14.5777

LIQUIDS in NONASSOC. GAS

(10⁶ BBL)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Piceance Mesaverde Iles, 2010	Uinta-Piceance	20	C. Spencer	8/25/94

Play Type	Play Probability	Success Ratio	Scenario				
Gas	1.000	0.550	1 scenario; 160 acres; Crovelli				
Geologic Variables	F100	F95	F75	F50	F25	F05	F0
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.14000	0.54000	0.85000	1.20000	1.60000	3.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	5.80000	(6.43333)	(7.06666)	7.70000	(8.46666)	(9.23333)	10.00000
Number of Untested Cells	4700	(6479)	(8702)	10036	(11191)	(12345)	13500

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
0.0000000	4.00000	55.00000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

	Mean	Std. Dev.	Resource	NGL					
Cond. # Cells	9792.42	1877.47	Oil	NA Gas	AD Gas	Gas / HC	NA Gas	AD Gas	Total
# Cells	9792.42	1877.47							
Oil Cell Depth	0.00000	0.00000	Prob. Unrested Cell has	0.0000	0.5500	0.0000	0.5500	0.0000	0.5500
Gas Cell Depth	7.77333	0.92285	Cond. Play Prob.	0.0000	1.0000	0.0000	1.0000	0.0000	1.0000
			Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000	0.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000				
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Piceance Mesaverde Iles, 2010

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Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod.	Untested Cells	0.00000	0.00000	0	0	0	0
Est.	Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
NONASSOCIATED GAS (10 ⁹ CF)							
No. Prod.	Untested Cells	5385.83	1033.78	.....	.....	.....	.....
Est.	Ultimate Recovery	0.49308	0.28984	.....	.....	.....	.....
Cond.	Play Potential	2655.62	510.176	1906.73	2293.66	2607.93	2965.26
Uncond.	Play Potential	2655.62	510.176	1906.73	2293.66	2607.93	2965.26

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
ASSOCIATED-DISSOLVED GAS (10 ⁹ CF)							
No. Prod.	Untested Cells	0.00000	0.00000	0	0	0	0
Est.	Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
TOTAL GAS (10 ⁹ CF)							
No. Prod.	Untested Cells	5385.83	1033.78	.....	.....	.....	.....
Est.	Ultimate Recovery	0.49308	0.28984	.....	.....	.....	.....
Cond.	Play Potential	2655.62	510.176	1906.73	2293.66	2607.93	2965.26
Uncond.	Play Potential	2655.62	510.176	1906.73	2293.66	2607.93	2965.26

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)							
No. Prod.	Untested Cells	5385.83	1033.78	.....	.....	.....	.....
Est.	Ultimate Recovery	0.00197	0.00116	.....	.....	.....	.....
Cond.	Play Potential	10.6225	2.04070	7.62694	9.17465	10.4317	11.8610
Uncond.	Play Potential	10.6225	2.04070	7.62694	9.17465	10.4317	11.8610

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Tertiary (Wasatch)-east (Uinta), 2015	Uinta-Piceance	20	Fouch/Schmoker	7/18/94

Play Type	Play Probability	Success Ratio	Scenario
Gas	1.000	0.880	2 of 2 scenarios: 80 acres; 0.4 prob; uniform
Geologic Variables	F100	F95	F50
Oil EUR* (10^6 BBL)	0.0000	(0.0000)	0.0000
NA Gas EUR* (10^9 CF)	0.03200	0.52000	1.10000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	3.00000	(3.76666)	5.30000
Number of Untested Cells	989	(1159)	(1839)
			(2688)
			(3538)
			(4218)
			4388

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio	Resource
CF/BBL	BBL/10^6 CF	Oil NA Gas AD Gas
-----	-----	-----
0.000000	7.4000	80.0000

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GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL					
	# Cells			Oil	NA Gas	AD Gas	Gas/HC	NA Gas	AD Gas	Total
Oil Cell Depth	0.00000	0.00000	0.00000	Prob. Untested Cell has Cond. Play Prob.	0.0000	0.8800	0.0000	0.8800	0.0000	0.8800
Gas Cell Depth	5.39166	1.12069	1.12069	Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000	0.0000	1.0000
				Prob. Exceed Cutoff	0.0000	1.0000	0.0000	1.0000	0.0000	1.0000
				Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Tertiary (Wasatch)-east (Uinta), 2015 C:\UNCONV\FEDCONTI\UINTA\2015-80.LIS

Crovelli & Balay

OIL (10^6 BBL)		Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod.	Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10^9 CF)

No. Prod. Untested Cells		2365.33	863.531	.....	.....	.....	.....	.....
Est. Ultimate Recovery	1.11880	0.95937	.....	.....	.....	.....	.....	.....
Cond. Play Potential	2646.33	967.245	1388.15	1957.43	2485.51	3156.06	4450.36	4450.36
Uncond. Play Potential	2646.33	967.245	1388.15	1957.43	2485.51	3156.06	4450.36	4450.36

ASSOCIATED-DISSOLVED GAS
(10^9 CF)

No. Prod. Untested Cells		0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10^9 CF)

No. Prod. Untested Cells		2365.33	863.531	.....	.....	.....	.....	.....
Est. Ultimate Recovery	1.11880	0.95937	.....	.....	.....	.....	.....	.....
Cond. Play Potential	2646.33	967.245	1388.15	1957.43	2485.51	3156.06	4450.36	4450.36
Uncond. Play Potential	2646.33	967.245	1388.15	1957.43	2485.51	3156.06	4450.36	4450.36

LIQUIDS in NONASSOC. GAS
(10^6 BBL)

No. Prod. Untested Cells		2365.33	863.531	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00828	0.00710	.....	.....	.....	.....	.....	.....
Cond. Play Potential	19.5829	7.15761	10.2723	14.4850	18.3928	23.3548	32.9327	32.9327
Uncond. Play Potential	19.5829	7.15761	10.2723	14.4850	18.3928	23.3548	32.9327	32.9327

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Tertiary (Wasatch)-east (Uinta), 2015	Uinta-Piceance	20	Fouch/Schmoker	7/18/94

Play Type	Play Probability	Success Ratio	Scenario
Gas	1.000	0.880	1 of 2 scenario: 160 acres; 0.6 prob; uniform
Geologic Variables	F100	F95	F50
Oil EUR* (10^6 BBL)	0.0000	(0.0000)	0.0000
NA Gas EUR* (10^9 CF)	0.0000	0.03200	1.10000
Oil Cells Depth (10^3 Ft)	0.0000	(0.0000)	0.0000
Gas Cells Depth (10^3 Ft)	3.0000	(3.76666)	4.53333
Number of Untested Cells	290	(372)	(699)
		(1108)	(1518)
			1927

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CP/BBL	Expected Liquids/Gas Ratio BBL/10^-6 CF	Estimated % of resource in subplay
0.000000	7.4000	80.00000

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GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL		
	# Cells			Oil	NA Gas	AD Gas	Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.8800	0.0000	0.8800
Gas Cell Depth	5.39166	1.12069	Cond. Play Prob.	0.0000	1.0000	0.0000	1.0000
			Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000		
Play Potential Cutoffs		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Tertiary (Wasatch) -east (Uinta), 2015 C:\UNCONV\FEDCONTI\UINTA\2015-160.LIS

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

No. Prod. Untested Cells	974.930	416.029	.....	.....	.....	.....	.....
Est. Ultimate Recovery	1.11880	0.95937	.....	.....	.....	.....	.....
Cond. Play Potential	1090.75	466.416	511.096	760.713	1002.91	1322.21	1967.98
Uncond. Play Potential	1090.75	466.416	511.096	760.713	1002.91	1322.21	1967.98

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁹ CF)

No. Prod. Untested Cells	974.930	416.029	.....	.....	.....	.....	.....
Est. Ultimate Recovery	1.11880	0.95937	.....	.....	.....	.....	.....
Cond. Play Potential	1090.75	466.416	511.096	760.713	1002.91	1322.21	1967.98
Uncond. Play Potential	1090.75	466.416	511.096	760.713	1002.91	1322.21	1967.98

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

No. Prod. Untested Cells	974.930	416.029	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00828	0.00710	.....	.....	.....	.....	.....
Cond. Play Potential	8.07156	3.45148	3.78211	5.62928	7.42152	9.78437	14.5630
Uncond. Play Potential	8.07156	3.45148	3.78211	5.62928	7.42152	9.78437	14.5630

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Tertiary (Wasatch)-west (Uinta), 2016	Uinta-Piceance	20	Fouch/Schumaker	7/18/94

Play Type	Play Probability	Success Ratio	Scenario					
Gas	1.000	0.300	2 of 2 scenarios: 80 acres; 0.4 prob; uniform					
Geologic Variables	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.23000	0.67000	1.08000	2.05000	2.65000	4.50000	0.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000	0.00000
Gas Cells Depth (10^3 Ft)	3.00000	(3.93333)	(4.85666)	5.80000	(6.87500)	(8.66666)	10.1000	
Number of Untested Cells	190	(353)	(1006)	(1821)	(2636)	(3289)	3452	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
0.000000	7.4000	75.00000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond. # Cells	Mean	Std. Dev.	Resource	NGL
# Cells	1820.50	941.511	Oil NA Gas AD Gas Gas/HC	NA Gas AD Gas Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	-----
Gas Cell Depth	5.99437	1.51472	0.0000 0.3000 0.0000 0.3000	0.3000 0.0000 0.3000
			Cond. Play Prob.	0.0000 1.0000 1.0000 0.0000
			Uncond. Play Prob.	0.0000 1.0000 1.0000 0.0000
			Prob. Exceed Cutoff	0.0000 1.0000 1.0000 0.0000
			Play Potential Cutoffs	0.0000 0.0000 0.0000 0.0000
				0.0000 0.0000 0.0000 0.0000

UNCONVENTIONAL RESOURCES for Tertiary (Wasatch)-west (Uinta), 2016 C:\UNCONV\FEDCONTI\UINTA\2016-80.LIS

	Mean	Std.	Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)								
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NONASSOCIATED GAS (10 ⁹ CF)								
No. Prod. Untested Cells	546.150	283.129	...	...	...	...	...	...
Est. Ultimate Recovery	1.01588	0.67105	...	...	...	...	...	...
Cond. Play Potential	554.820	288.051	220.453	354.179	492.411	684.594	1099.87	1099.87
Uncond. Play Potential	554.820	288.051	220.453	354.179	492.411	684.594	1099.87	1099.87
ASSOCIATED-DISSOLVED GAS (10 ⁹ CF)								
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL GAS (10 ⁹ CF)								
No. Prod. Untested Cells	546.150	283.129	...	...	...	...	...	...
Est. Ultimate Recovery	1.01588	0.67105	...	...	...	...	...	...
Cond. Play Potential	554.820	288.051	220.453	354.179	492.411	684.594	1099.87	1099.87
Uncond. Play Potential	554.820	288.051	220.453	354.179	492.411	684.594	1099.87	1099.87
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)								
No. Prod. Untested Cells	546.150	283.129	...	...	...	...	...	...
Est. Ultimate Recovery	0.00752	0.00497	...	...	...	...	...	...
Cond. Play Potential	4.10567	2.13158	1.63135	2.62092	3.64384	5.06600	8.13901	8.13901
Uncond. Play Potential	4.10567	2.13158	1.63135	2.62092	3.64384	5.06600	8.13901	8.13901

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INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Tertiary (Wasatch)-west (Uinta), 2016	Uinta-Piceance	20	Fouch/Schmoker	7/18/94

Play Type	Play Probability	Success Ratio	Scenario
Gas	1.000	0.300	1 of 2 scenario: 160 acres; 0.6 prob; uniform
Geologic Variables	F100	F95	F75
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)
NA Gas EUR* (10^9 CF)	0.00000	0.23000	0.67000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)
Gas Cells Depth (10^3 Ft)	3.00000	(3.93333)	(4.86666)
Number of Untested Cells	90	(171)	(494)
		(897)	(1300)
			(1623)
			1704

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio

Expected Liquids/Gas Ratio

BBL/10^6 CF

7.4000

Estimated % of resource in subplay
75.00000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Oil	NA Gas	AD Gas	Gas/HC	NGL	NA Gas	AD Gas	Total
	# Cells	896.500	465.635									
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.3000	0.0000	0.0000	0.3000	0.3000	0.0000	0.3000	
Gas Cell Depth	5.99437	1.51472	Cond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000	1.0000	0.0000	1.0000	
			Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000	1.0000	0.0000	1.0000	
			Prob. Exceed Cutoff	0.0000	1.0000							
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

UNCONVENTIONAL RESOURCES for Tertiary (Wasatch)-west (Uinta), 2016 C:\UNCONV\FEDCONTI\UINTA\2016-160.LIS

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁻⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NONASSOCIATED GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	268.950	140.363	.....	.....	.....	.....	.....
Est. Ultimate Recovery	1.01588	0.67105	.....	.....	.....	.....	.....
Cond. Play Potential	273.220	143.015	107.738	173.691	242.063	337.348	543.860
Uncond. Play Potential	273.220	143.015	107.738	173.691	242.063	337.348	543.860
ASSOCIATED-DISSOLVED GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	268.950	140.363	.....	.....	.....	.....	.....
Est. Ultimate Recovery	1.01588	0.67105	.....	.....	.....	.....	.....
Cond. Play Potential	273.220	143.015	107.738	173.691	242.063	337.348	543.860
Uncond. Play Potential	273.220	143.015	107.738	173.691	242.063	337.348	543.860
LIQUIDS in NONASSOC. GAS (10 ⁻⁶ BBL)							
No. Prod. Untested Cells	268.950	140.363	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00752	0.00497	.....	.....	.....	.....	.....
Cond. Play Potential	2.02182	1.05831	0.79726	1.28532	1.79126	2.49638	4.02457
Uncond. Play Potential	2.02182	1.05831	0.79726	1.28532	1.79126	2.49638	4.02457

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INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Basin Flank Mesaverde (Uinta), 2018	Uinta-Piceance	20	Fouch/Schmoker	7/20/94

Play Type	Play Probability	Success Ratio	Scenario					
Gas	1.000	0.600	1 scenario: 160 acres; Crovelli					
Geologic Variables	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.00700	0.20000	0.90000	1.60000	2.60000	4.00000	0.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000	0.00000
Gas Cells Depth (10^3 Ft)	8.10000	(9.40000)	(11.0250)	12.0000	(13.0000)	(14.0000)	15.0000	11.458
Number of Untested Cells	334	(2229)	(4124)	6019	(7832)	(9645)	11458	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio	Estimated % of resource in subplay
CF/BBL	BBL/10^-6 CF	
-----	7.4000	60.00000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL		
	# Cells	5973.40	2441.08	Oil	NA Gas	AD Gas	Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.6000	0.6000	0.6000
Gas Cell Depth	11.9081	1.46821	Cond. Play Prob.	0.0000	1.0000	1.0000	1.0000
			Uncond. Play Prob.	0.0000	1.0000	1.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000	1.0000	1.0000
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Basin Flank Mesaverde (Uinta), 2018 C:\UNCONV\FEDCONTI\UINTA\2018.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁻⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁻⁹ CF)

No. Prod. Untested Cells	3584.04	1465.14	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.63353	0.54527	.....	.....	.....	.....	.....
Cond. Play Potential	2270.58	928.777	1100.37	1611.84	2101.56	2740.07	4013.70
Uncond. Play Potential	2270.58	928.777	1100.37	1611.84	2101.56	2740.07	4013.70

ASSOCIATED-DISSOLVED GAS
(10⁻⁹ CF)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁻⁹ CF)

No. Prod. Untested Cells	3584.04	1465.14	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.63353	0.54527	1100.37	1611.84	2101.56	2740.07	4013.70
Cond. Play Potential	2270.58	928.777	1100.37	1611.84	2101.56	2740.07	4013.70
Uncond. Play Potential	2270.58	928.777	1100.37	1611.84	2101.56	2740.07	4013.70

LIQUIDS in NONASSOC. GAS
(10⁻⁶ BBL)

No. Prod. Untested Cells	3584.04	1465.14	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00469	0.00404	.....	.....	.....	.....	.....
Cond. Play Potential	16.8023	6.87295	8.14274	11.9276	15.5515	20.2765	29.7014
Uncond. Play Potential	16.8023	6.87295	8.14274	11.9276	15.5515	20.2765	29.7014

INPUT SUMMARY

Play Name		Province Name		Assessment Date
Deep synclinal Mesaverde (Uinta)	2020	Uinta-Piceance	20	Fouch/Schmoker 7/25/94

Play Type	Play Probability	Success Ratio	Scenario	
Gas	1.000	0.200	1 scenario: 160 acres; uniform	
Geologic Variables	F100	F95	F75	F50
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	0.00000	(0.00000)
NA Gas EUR* (10^9 CF)	0.00000	0.00700	0.20000	0.90000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	0.00000	(0.00000)
Gas Cells Depth (10^3 Ft)	15.000	(16.00000)	(17.00000)	18.0000
Number of Untested Cells	528	(747)	(1624)	(2720)
				(3817)
				(4694)
				4913

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio	Estimated % of resource in subplay
CF/BBL	BBL/10^6 CF	
0.000000	7.4000	2.000000

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GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource				NGL	Total
				Oil	NA Gas	AD Gas	Gas/HC		
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.2000	0.0000	0.2000	0.2000	0.2000
Gas Cell Depth	18.4375	1.93548	Cond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000	1.0000
			Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000				
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Deep synclinal Mesaverde (Uinta), 2020 C:\UNCONV\FEDCONTI\UINTA\2020.LIS Crovelli & Balay

OIL (10^6 BBL)		Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod.	Untested Cells	0.00000	0.00000	0	0	0	0	0
Est.	Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10^9 CF)

No. Prod. Untested Cells		543.975	254.061	.....	.....	.....	.....	.....
Est.	Ultimate Recovery	0.02112	0.01818	.....	.....	.....	.....	.....
Cond.	Play Potential	11.4874	5.38187	4.99905	7.70268	10.4024	14.0482	21.6459
Uncond.	Play Potential	11.4874	5.38187	4.99905	7.70268	10.4024	14.0482	21.6459

ASSOCIATED-DISSOLVED GAS
(10^9 CF)

No. Prod. Untested Cells		0.00000	0.00000	0	0	0	0	0
Est.	Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10^9 CF)

No. Prod. Untested Cells		543.975	254.061	.....	.....	.....	.....	.....
Est.	Ultimate Recovery	0.02112	0.01818	.....	.....	.....	.....	.....
Cond.	Play Potential	11.4874	5.38187	4.99905	7.70268	10.4024	14.0482	21.6459
Uncond.	Play Potential	11.4874	5.38187	4.99905	7.70268	10.4024	14.0482	21.6459

LIQUIDS in NONASSOC. GAS
(10^6 BBL)

No. Prod. Untested Cells		543.975	254.061	.....	.....	.....	.....	.....
Est.	Ultimate Recovery	0.00016	0.00013	.....	.....	.....	.....	.....
Cond.	Play Potential	0.08501	0.03983	0.03699	0.05700	0.07698	0.10396	0.16018
Uncond.	Play Potential	0.08501	0.03983	0.03699	0.05700	0.07698	0.10396	0.16018

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Fractured Interbed, 2103	Paradox Basin	21	Huffman	9/1/94

Play Type	Play Probability	Success Ratio	Scenario	
Oil	1.000	0.200	1 scenario: 960 acres; Crovelli	
Geologic Variables	F100	F95	F75	F50
Oil EUR* (10^6 BBL)	0.00000	0.03400	0.12500	0.30000
NA Gas EUR* (10^9 CF)	0.00000	(0.00000)	0.00000	(0.00000)
Oil Cells Depth (10^3 Ft)	8.00000	(8.33333)	(8.66666)	9.00000
Gas Cells Depth (10^3 Ft)	0.00000	(0.00000)	0.00000	(0.00000)
Number of Untested Cells	181	(721)	(1260)	(1800)

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^-6 CF	Estimated % of resource in subplay
800.0000	0.0000	65.00000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

	Mean	Std. Dev.						NGL		
Cond. # Cells	2902.92	2282.42	Oil	NA Gas	AD Gas	Gas/HC	NA Gas	AD Gas	Total	
# Cells	2902.92	2282.42								
Oil Cell Depth	9.00000	0.43885	Prob. Untested Cell has	0.2000	0.0000	0.2000	0.2000	0.0000	0.0000	
Gas Cell Depth	0.00000	0.00000	Cond. Play Prob.	1.0000	0.0000	1.0000	1.0000	0.0000	0.0000	
			Uncond. Play Prob.	1.0000	0.0000	1.0000	1.0000	0.0000	0.0000	
			Prob. Exceed Cutoff	1.0000	0.0000					
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	

UNCONVENTIONAL RESOURCES for Fractured Interbed, 2103 C:\UNCONV\FEDCONTI\SAN-JUAN\2103.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	580.585	456.993	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.27129	0.23025	.....	.....	.....	.....	.....
Cond. Play Potential	157.509	124.103	39.4433	77.4237	123.720	197.700	388.066
Uncond. Play Potential	157.509	124.103	39.4433	77.4237	123.720	197.700	388.066
NONASSOCIATED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
ASSOCIATED-DISSOLVED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	580.585	456.993	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.21704	0.18420	.....	.....	.....	.....	.....
Cond. Play Potential	126.007	99.2828	31.5547	61.9389	98.9760	158.160	310.453
Uncond. Play Potential	126.007	99.2828	31.5547	61.9389	98.9760	158.160	310.453
TOTAL GAS (10 ⁹ CF)							
No. Prod. Untested Cells	580.585	456.993	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.21704	0.18420	.....	.....	.....	.....	.....
Cond. Play Potential	126.007	99.2828	31.5547	61.9389	98.9760	158.160	310.453
Uncond. Play Potential	126.007	99.2828	31.5547	61.9389	98.9760	158.160	310.453
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

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UNCLE 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\SAN-JUAN\2205.LIS (from 2205.PLA) 8-Jul-1997 15:26:00 Run No. 1

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Central Basin Dakota Gas, 2205	San Juan Basin	22	Huffman	9/1/94

Play Type	Play Probability	Success Ratio	Scenario
Gas	1.000	0.600	1 scenario: 160 acres; Crovelli
Geologic Variables	F100	F95	F75
Oil EUR* (10^6 BBL)	0.0000	(0.0000)	0.0000
NA Gas EUR* (10^9 CF)	0.0000	0.02700	0.16000
Oil Cells Depth (10^3 Ft)	0.0000	(0.0000)	0.0000
Gas Cells Depth (10^3 Ft)	5.0000	(5.6666)	7.0000
Number of Untested Cells	2316	(4258)	(6201)
			8143 (11473)
			(17023) 21463

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio	Resource
CF/BBL	BBL/10^6 CF	Oil NA Gas AD Gas Gas/HC
-----	-----	-----
0.000000	0.0400	0.0000 0.6000 0.0000 0.6000
		0.0000 1.0000 0.0000 1.0000
		0.0000 1.0000 0.0000 1.0000
		0.0000 1.0000 0.0000 1.0000
		0.0000 1.0000 0.0000 1.0000

Gas-Oil Ratio	Estimated % of resource in subplay	Resource
CF/BBL	-----	Oil NA Gas AD Gas Gas/HC
-----	-----	-----
0.000000	40.00000	0.0000 0.0000 0.0000 0.0000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	Oil NA Gas AD Gas Gas/HC	NA Gas AD Gas Total
Gas Cell Depth	6.85416	0.64516	Cond. Play Prob.	0.00000 0.60000 0.00000 0.60000	0.6000 0.0000 0.60000
			Uncond. Play Prob.	0.00000 1.00000 0.00000 1.00000	0.0000 1.00000 0.00000 1.00000
			Prob. Exceed Cutoff	0.00000 1.00000 0.00000 1.00000	0.0000 1.00000 0.00000 1.00000
			Play Potential Cutoffs	0.00000 0.00000 0.00000 0.00000	0.0000 0.00000 0.00000 0.00000

UNCONVENTIONAL RESOURCES for Central Basin Dakota Gas, 2205

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Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod.	Untested Cells	0.00000	0.00000	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NONASSOCIATED GAS (10 ⁹ CF)							
No. Prod.	Untested Cells	5559.90	2484.52	.....	.....	.....	.....
Est. Ultimate Recovery	0.59075	0.71151	.....	.....	.....	.....	.....
Cond. Play Potential	3284.51	1460.86	1485.38	2248.04	2998.34	3999.07	6052.37
Uncond. Play Potential	3284.51	1468.86	1485.38	2248.04	2998.34	3999.07	6052.37
ASSOCIATED-DISSOLVED GAS (10 ⁹ CF)							
No. Prod.	Untested Cells	0.00000	0.00000	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL GAS (10 ⁹ CF)							
No. Prod.	Untested Cells	5559.90	2484.52	.....	.....	.....	.....
Est. Ultimate Recovery	0.59075	0.71151	.....	.....	.....	.....	.....
Cond. Play Potential	3284.51	1468.86	1485.38	2248.04	2998.34	3999.07	6052.37
Uncond. Play Potential	3284.51	1468.86	1485.38	2248.04	2998.34	3999.07	6052.37
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)							
No. Prod.	Untested Cells	5559.90	2484.52	.....	.....	.....	.....
Est. Ultimate Recovery	0.00002	0.00003	.....	.....	.....	.....	.....
Cond. Play Potential	0.13138	0.05875	0.05942	0.08992	0.11993	0.15996	0.24209
Uncond. Play Potential	0.13138	0.05875	0.05942	0.08992	0.11993	0.15996	0.24209

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UNCLE 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\SAN-JUAN\2208.LIS (from 2208.PLA) 8-Jul-1997 15:28:25 Run No. 1

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Mancos Fractured Shale, 2208	San Juan Basin	22	Huffman	9/1/94

Play Type	Play Probability	Success Ratio	Scenario
Oil	1.000	0.200	1 scenario: 160 acres; Crovelli
Geologic Variables	F100	F95	F75
Oil EUR* (10^6 BBL)	0.00000	0.00080	0.00600
NA Gas EUR* (10^9 CF)	0.00000	(0.00000)	(0.00000)
Oil Cells Depth (10^3 Ft)	1.00000	(1.50000)	(2.00000)
Gas Cells Depth (10^3 Ft)	0.00000	(0.00000)	0.00000
Number of Untested Cells	1639	(2594)	(3548)
			(7651)
			(12898)
			17095

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
500.0000	0.0000	40.00000

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GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Oil	NA Gas	AD Gas	Gas/HC	NGL	NA Gas	AD Gas	Total
	# Cells	6049.87	3452.72									
		6049.87	3452.72									
Oil Cell Depth	2.96562	1.31423	Prob. Untested Cell has	0.2000	0.0000	0.2000				0.0000	0.0000	0.0000
Gas Cell Depth	0.00000	0.00000	Cond. Play Prob.	1.0000	0.0000	1.0000				0.0000	0.0000	0.0000
			Uncond. Play Prob.	1.0000	0.0000	1.0000				0.0000	0.0000	0.0000
			Prob. Exceed Cutoff	1.0000	0.0000							
			Play Potential Cutoffs	0.0000	0.0000	0.0000				0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Mancos Fractured Shale, 2208 C:\UNCONV\FEDCONTI\SAN-JUAN\2208.LIS

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	1209.98	691.245	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.06243	0.10821	.....	.....	.....	.....	.....
Cond. Play Potential	75.5387	43.3183	27.2581	45.7337	65.5286	93.8915	157.531
Uncond. Play Potential	75.5387	43.3183	27.2581	45.7337	65.5286	93.8915	157.531
NONASSOCIATED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
ASSOCIATED-DISSOLVED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	1209.98	691.245	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.03122	0.05411	.....	.....	.....	.....	.....
Cond. Play Potential	37.7694	21.6591	13.6291	22.8668	32.7643	46.9457	78.7656
Uncond. Play Potential	37.7694	21.6591	13.6291	22.8668	32.7643	46.9457	78.7656
TOTAL GAS (10 ⁹ CF)							
No. Prod. Untested Cells	1209.98	691.245	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.03122	0.05411	.....	.....	.....	.....	.....
Cond. Play Potential	37.7694	21.6591	13.6291	22.8668	32.7643	46.9457	78.7656
Uncond. Play Potential	37.7694	21.6591	13.6291	22.8668	32.7643	46.9457	78.7656
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Central Basin Mesaverde Gas, 2209	San Juan Basin	22	Huffman	10/4/94

Play Type	Play Probability	Success Ratio	Scenario					
Gas	1.000	0.550	1 scenario: 160 acres; Crovelli					
Geologic Variables	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.03500	0.22000	0.80000	2.40000	6.70000	29.0000	0.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	1.00000	(1.50000)	(2.00000)	2.50000	(3.12500)	(4.16666)	5.00000	
Number of Untested Cells	2740	(3528)	(4316)	5104	(9244)	(16144)	21664	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio	Estimated % of resource in subplay
CF/BBL	BBL/10^6 CF	
0.000000	0.0500	40.00000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Resource	Resource	Resource	NGL
	# Cells	7395.60	4321.66	Oil	NA Gas	AD Gas	Gas/HC	NA Gas
Oil Cell Depth	0.00000	0.00000	Prob. Unrested Cell has	0.0000	0.5500	0.0000	0.5500	0.0000
Gas Cell Depth	2.63645	0.85508	Cond. Play Prob.	0.0000	1.0000	0.0000	1.0000	0.0000
			Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000			
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Central Basin Mesaverde Gas, 2209

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Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁻⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁻⁹ CF)

No. Prod. Untested Cells	4067.58	2377.30	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.94255	1.68136	.....	.....	.....	.....	.....
Cond. Play Potential	3833.90	2243.29	1355.35	2294.86	3309.06	4771.50	8079.02
Uncond. Play Potential	3833.90	2243.29	1355.35	2294.86	3309.06	4771.50	8079.02

ASSOCIATED-DISSOLVED GAS
(10⁻⁹ CF)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁻⁹ CF)

No. Prod. Untested Cells	4067.58	2377.30	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.94255	1.68136	.....	.....	.....	.....	.....
Cond. Play Potential	3833.90	2243.29	1355.35	2294.86	3309.06	4771.50	8079.02
Uncond. Play Potential	3833.90	2243.29	1355.35	2294.86	3309.06	4771.50	8079.02

LIQUIDS in NONASSOC. GAS
(10⁻⁶ BBL)

No. Prod. Untested Cells	4067.58	2377.30	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00005	0.00008	.....	.....	.....	.....	.....
Cond. Play Potential	0.19169	0.11216	0.06777	0.11474	0.16545	0.23857	0.40395
Uncond. Play Potential	0.19169	0.11216	0.06777	0.11474	0.16545	0.23857	0.40395

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Pictured Cliffs Gas, 2211	San Juan Basin	22	Huffman	9/1/94

Play Type	Play Probability	Success Ratio	Scenario					
Gas	1.000	0.500	1 scenario: 160 acres; Crovelli					
Geologic Variables	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10 ⁶ BBL)	0.00000	(0.00000)	0.00000	(0.00000)	0.00000	(0.00000)	0.00000	0.00000
NA Gas EUR* (10 ⁹ CF)	0.00000	0.00600	0.07000	0.27000	1.16000	3.00000	7.00000	0.00000
Oil Cells Depth (10 ⁻³ Ft)	0.00000	(0.00000)	0.00000	(0.00000)	0.00000	(0.00000)	0.00000	0.00000
Gas Cells Depth (10 ⁻³ Ft)	1.00000	(1.33333)	1.66666	2.00000	(2.40000)	(3.06666)	3.60000	
Number of Untested Cells	1447	(3341)	(5234)	7128	(8963)	(12021)	14468	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio
CF/BBL	BBL/10 ⁻⁶ CF
-----	-----
0.000000	0.0300

Gas-Oil Ratio	Estimated % of resource in subplay
CF/BBL	-----
-----	-----
0.000000	40.00000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL		
	# Cells	7293.95	2770.45	Oil	NA Gas	AD Gas	Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.00000	0.50000	0.50000	0.50000
Gas Cell Depth	2.08000	0.55521	Cond. Play Prob.	0.00000	1.00000	1.00000	1.00000
			Uncond. Play Prob.	0.00000	1.00000	1.00000	1.00000
			Prob. Exceed Cutoff	0.00000	1.00000	1.00000	1.00000
			Play Potential Cutoffs	0.00000	0.00000	0.00000	0.00000

UNCONVENTIONAL RESOURCES for Pictured Cliffs Gas, 2211 C:\UNCN\FCDCNTI\SAN-JUAN\2211.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

No. Prod. Untested Cells	3646.98	1385.88	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.35800	0.50439	.....	.....	.....	.....	.....
Cond. Play Potential	1305.62	497.081	666.159	952.024	1220.18	1563.86	2234.94
Uncond. Play Potential	1305.62	497.081	666.159	952.024	1220.18	1563.86	2234.94

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁹ CF)

No. Prod. Untested Cells	3646.98	1385.88	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.35800	0.50439	.....	.....	.....	.....	.....
Cond. Play Potential	1305.62	497.081	666.159	952.024	1220.18	1563.86	2234.94
Uncond. Play Potential	1305.62	497.081	666.159	952.024	1220.18	1563.86	2234.94

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

No. Prod. Untested Cells	3646.98	1385.88	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00001	0.00002	.....	.....	.....	.....	.....
Cond. Play Potential	0.03917	0.01491	0.01938	0.02856	0.03661	0.04692	0.06705
Uncond. Play Potential	0.03917	0.01491	0.01998	0.02856	0.03661	0.04692	0.06705

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UNCLE 97.1 Crovelli & Balay C:\UNCONV\FEDCONT\BAKKEN\2804.LIS (from 2804.PLA) 8-Jul-1997 15:38:19 Run No. 1

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Bakken Formation, Central Montana, 2804	Central Montana	28	Dyman/Perry	8-2-94

Play Type	Play Probability	Success Ratio	Scenario
Oil	0.250	0.200	1 scenario: 640 acres; Crovelli
Geologic Variables	F100	F95	F75
Oil EUR* (10^6 BBL)	0.00000	0.00030	0.00480
NA Gas EUR* (10^9 CF)	0.00000	(0.00000)	0.00000
Oil Cells Depth (10^3 Ft)	5.00000	(5.83333)	(6.66666)
Gas Cells Depth (10^3 Ft)	0.00000	(0.00000)	0.00000
Number of Untested Cells	200	(1909)	(3619)
			5328 (8996) (15109) 20000

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio
CF/BBL

Expected Liquids/Gas Ratio
BBL/10^6 CF

Estimated % of resource in subplay

10.00000

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GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Oil	NA Gas	AD Gas	Gas/HC	NGL	AD Gas	Total
	# Cells	6802.12	4326.60								
		1700.53	3654.49								
Oil Cell Depth	7.50000	1.09713	Prob. Untested Cell has	0.2000	0.0000	0.2000	0.2000	0.2000	0.0000	0.0000	0.0000
Gas Cell Depth	0.00000	0.00000	Cond. Play Prob.	1.0000	0.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.0000
			Uncond. Play Prob.	0.2500	0.0000	0.2500	0.2500	0.2500	0.0000	0.0000	0.0000
			Prob. Exceed Cutoff	1.0000	0.0000						
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Bakken Formation, Central Montana, 2804 C:\UNCONV\FEDCONT\BAKKEN\2804.LIS

Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	1360.43	865.951	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00475	0.00707	.....	.....	.....	.....	.....
Cond. Play Potential	6.46440	4.12302	2.08467	3.67516	5.45020	8.08257	14.2491
Uncond. Play Potential	1.61610	3.47637	0.00000	0.00000	0.00000	0.00000	8.92143

NONASSOCIATED GAS

(10⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
NONASSOCIATED GAS							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

ASSOCIATED-DISSOLVED GAS

(10⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
ASSOCIATED-DISSOLVED GAS							
No. Prod. Untested Cells	1360.43	865.951	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00380	0.00565	.....	.....	.....	.....	.....
Cond. Play Potential	5.17152	3.29842	1.66773	2.94013	4.36016	6.46606	11.3993
Uncond. Play Potential	1.29288	2.78110	0.00000	0.00000	0.00000	0.00000	7.13715

TOTAL GAS

(10⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
TOTAL GAS							
No. Prod. Untested Cells	1360.43	865.951	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00380	0.00565	.....	.....	.....	.....	.....
Cond. Play Potential	5.17152	3.29842	1.66773	2.94013	4.36016	6.46606	11.3993
Uncond. Play Potential	1.29288	2.78110	0.00000	0.00000	0.00000	0.00000	7.13715

LIQUIDS in NONASSOC. GAS

(10⁶ BBL)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
LIQUIDS in NONASSOC. GAS							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

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INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Biogenic Gas - High Potential, 2810	Northern Great Plains	28	C. Spencer	8/25/94

Play Type	Play Probability	Success Ratio	Scenario
Gas	1.000	0.800	1 scenario; 160 acres; Crovelli
Geologic Variables	F100	F95	F50
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.05000	0.35000
Oil Cells Depth (10^-3 Ft)	0.00000	(0.00000)	0.00000
Gas Cells Depth (10^-3 Ft)	0.50000	(0.83333)	1.16666
Number of Untested Cells	4000	(4453)	1.50000
		(4907)	1.87500
			2.50000
			(9020)
			(15120)
			200000

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio

Expected Liquids/Gas Ratio

BBL/10^-6 CF

Estimated % of resource in subplay

0.00000

20.00000

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B36

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Oil	NA Gas	AD Gas	Gas/HC	NGL	NA Gas	AD Gas	Total
	# Cells	7519.70	3714.04									
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.00000	0.80000	0.00000	0.00000	0.8000	0.0000	0.0000	0.0000	-----
Gas Cell Depth	1.56354	0.53309	Cond. Play Prob.	0.00000	1.00000	0.00000	1.00000	1.0000	0.0000	0.0000	0.0000	-----
			Uncond. Play Prob.	0.00000	1.00000	0.00000	1.00000	1.0000	0.0000	0.0000	0.0000	-----
			Prob. Exceed Cutoff	0.00000	1.00000							-----
			Play Potential Cutoffs	0.00000	0.00000	0.00000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Biogenic Gas - High Potential, 2810 C:\UNICONV\FEDCONT\PLAINS\2810.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

No. Prod. Untested Cells	6015.76	2971.44	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.18075	0.13734	.....	.....	.....	.....	.....
Cond. Play Potential	1087.35	537.194	451.941	711.297	974.867	1336.10	2102.85
Uncond. Play Potential	1087.35	537.194	451.941	711.297	974.867	1336.10	2102.85

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁹ CF)

No. Prod. Untested Cells	6015.76	2971.44	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.18075	0.13734	.....	.....	.....	.....	.....
Cond. Play Potential	1087.35	537.194	451.941	711.297	974.867	1336.10	2102.85
Uncond. Play Potential	1087.35	537.194	451.941	711.297	974.867	1336.10	2102.85

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Biogenic Gas - Medium Potential, 2811	Northern Great Plains	28	C. Spencer	7/94

Play Type	Play Probability	Success Ratio	Scenario	
Gas	1.000	0.700	1 scenario; 160 acres; Crovelli	
Geologic Variables	F100	F95	F50	F05
Oil EUR* (10^6 BBL)	0.0000	(0.0000)	0.0000	(0.0000)
NA Gas EUR* (10^9 CF)	0.0000	0.01100	0.32000	0.53000
Oil Cells Depth (10^3 Ft)	0.0000	(0.0000)	0.00000	(0.00000)
Gas Cells Depth (10^3 Ft)	0.5000	(0.93333)	1.80000	(2.35000)
Number of Untested Cells	1000	(23333)	(36667)	(50000)

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio	Estimated % of resource in subplay
CF/BBL	BBL/10^6 CF	
-----	-----	20.00000
0.000000	0.0000	

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Resource	Resource	Resource	Resource	NGL	AD Gas	Total
	# Cells	67353.7	42097.2	Oil	NA Gas	AD Gas	Gas/HC	Gas/HC	-----	-----	-----
		67353.7	42097.2	-----	-----	-----	-----	-----	-----	-----	-----
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.7000	0.0000	0.7000	0.7000	0.0000	0.0000	0.0000
Gas Cell Depth	1.92375	0.74852	Cond. Play Prob.	0.0000	1.00000	0.0000	1.00000	1.00000	0.0000	0.0000	0.0000
			Uncond. Play Prob.	0.0000	1.00000	0.0000	1.00000	1.00000	0.0000	0.0000	0.0000
			Prob. Exceed Cutoff	0.0000	1.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
			Play Potential Cutoffs	0.0000	0.00000	0.0000	0.00000	0.00000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Biogenic Gas - Medium Potential, 2811 C:\UNCONV\FEDCONTI\PLAINS\2811.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NONASSOCIATED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	47147.6	29468.3	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.08688	0.09962	.....	.....	.....	.....	.....
Cond. Play Potential	4095.95	2560.15	1350.42	2357.85	3473.29	5116.40	8933.30
Uncond. Play Potential	4095.95	2560.15	1350.42	2357.85	3473.29	5116.40	8933.30
ASSOCIATED-DISSOLVED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL GAS (10 ⁹ CF)							
No. Prod. Untested Cells	47147.6	29468.3	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.08688	0.09962	.....	.....	.....	.....	.....
Cond. Play Potential	4095.95	2560.15	1350.42	2357.85	3473.29	5116.40	8933.30
Uncond. Play Potential	4095.95	2560.15	1350.42	2357.85	3473.29	5116.40	8933.30
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

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INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Biogenic Gas - Low Potential, 2812	Northern Great Plains	28	C. Spencer	7/94

Play Type	Play Probability	Success Ratio	Scenario	
Gas	1.000	0.500	1 scenario; 160 acres; Crovelli	
Geologic Variables	F100	F95	F75	F50
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	0.00000	(0.00000)
NA Gas EUR* (10^9 CF)	0.00000	0.00600	0.08000	0.18000
Oil Cells Depth (10^-3 Ft)	0.00000	(0.00000)	0.00000	(0.00000)
Gas Cells Depth (10^-3 Ft)	0.50000	(1.00000)	1.50000	2.00000
Number of Untested Cells	10000	(33333)	(56667)	80000
				(160000)
				(293333)
				400000

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
-	-	15.00000
0.000000	0.0000	

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GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Oil	NA Gas	AD Gas	Gas/HC	NGL	NA Gas	AD Gas	Total
	# Cells	119832.	87292.3	-	-	-	-	-	-	-	-	-
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.00000	0.50000	0.00000	0.00000	0.5000	0.0000	0.0000	0.0000	0.0000
Gas Cell Depth	2.13645	0.85508	Cond. Play Prob.	0.00000	1.00000	0.00000	1.00000	1.0000	0.0000	0.0000	0.0000	0.0000
			Uncond. Play Prob.	0.00000	1.00000	0.00000	1.00000	1.0000	0.0000	0.0000	0.0000	0.0000
			Prob. Exceed Cutoff	0.00000	1.00000	0.00000	1.00000	1.0000	0.0000	0.0000	0.0000	0.0000
			Play Potential Cutoffs	0.00000	0.00000	0.00000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Biogenic Gas - Low Potential, 2812 C:\UNCONV\FEDCONT\PLAINS\2812.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

No. Prod. Untested Cells	59916.4	43646.5	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.03844	0.05104	.....	.....	.....	.....	.....
Cond. Play Potential	2303.04	1677.71	636.397	1198.76	1861.48	2890.59	5444.90
Uncond. Play Potential	2303.04	1677.71	636.397	1198.76	1861.48	2890.59	5444.90

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁹ CF)

No. Prod. Untested Cells	59916.4	43646.5	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.03844	0.05104	.....	.....	.....	.....	.....
Cond. Play Potential	2303.04	1677.71	636.397	1198.76	1861.48	2890.59	5444.90
Uncond. Play Potential	2303.04	1677.71	636.397	1198.76	1861.48	2890.59	5444.90

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

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INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Fairway Bakken, 3110	Williston Basin	31	Schmoker	8-2-94

Play Type	Play Probability	Success Ratio	Scenario
Oil	1.000	0.700	1 scenario; 480 acres; Crovelli
Geologic Variables			
Oil EUR* (10^6 BBL)	0.0000	0.00280	F95
NA Gas EUR* (10^9 CF)	0.0000	(0.0000)	F75
Oil Cells Depth (10^3 Ft)	10.000	(10.1666)	F50
Gas Cells Depth (10^3 Ft)	0.0000	(0.00000)	F25
Number of Untested Cells	163	(361)	F05
		(558)	F0
		(756)	Cutoff
		(949)	(1142)
			1335

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio

Expected Liquids/Gas Ratio

BBL/10^-6 CF

0.0000

Estimated % of resource in subplay

40.00000

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GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource				NGL	AD Gas	Total
				Oil	NA Gas	AD Gas	Gas/HC			
Oil Cell Depth	10.5000	0.21942	Prob. Untested Cell has	0.7000	0.0000	0.7000		0.0000	0.0000	0.0000
Gas Cell Depth	0.00000	0.00000	Cond. Play Prob.	1.0000	0.0000	1.0000		0.0000	0.0000	0.0000
			Uncond. Play Prob.	1.0000	0.0000	1.0000		0.0000	0.0000	0.0000
			Prob. Exceed Cutoff	1.0000	0.0000					
			Play Potential Cutoffs	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Fairway Bakken, 3110 C:\UNCONV\FEDCONTI\BAKKEN\3110.LIS

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	527.030	180.458	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.05519	0.05113	.....	.....	.....	.....	.....
Cond. Play Potential	29.0868	10.0284	15.8444	21.9347	27.4983	34.4730	47.7239
Uncond. Play Potential	29.0868	10.0284	15.8444	21.9347	27.4983	34.4730	47.7239

NONASSOCIATED GAS
(10⁹ CF)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

No. Prod. Untested Cells	527.030	180.458	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.04967	0.04602	.....	.....	.....	.....	.....
Cond. Play Potential	26.1781	9.02559	14.2600	19.7413	24.7485	31.0257	42.9515
Uncond. Play Potential	26.1781	9.02559	14.2600	19.7413	24.7485	31.0257	42.9515

TOTAL GAS
(10⁹ CF)

No. Prod. Untested Cells	527.030	180.458	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.04967	0.04602	.....	.....	.....	.....	.....
Cond. Play Potential	26.1781	9.02559	14.2600	19.7413	24.7485	31.0257	42.9515
Uncond. Play Potential	26.1781	9.02559	14.2600	19.7413	24.7485	31.0257	42.9515

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Intermediate Bakken, 3111	Williston Basin	31	Schmoker	8-2-94

Play Type	Play Probability	Success Ratio	Scenario
Oil	1.000	0.200	1 scenario; 640 acres; Crovelli
Geologic Variables	F100	F95	F75
Oil EUR* (10^6 BBL)	0.0000	0.00030	0.00480
NA Gas EUR* (10^9 CF)	0.0000	(0.0000)	0.00000
Oil Cells Depth (10^3 Ft)	7.5000	(8.50000)	(9.75000)
Gas Cells Depth (10^3 Ft)	0.0000	(0.00000)	0.00000
Number of Untested Cells	976	(3253)	(6098)
			(9107)
			(10408)
			11709

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
800.0000	0.0000	10.00000

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GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Resource	Resource	NGL
	# Cells			Oil	NA Gas	AD Gas	Gas/HC
Oil Cell Depth	10.1162	0.80938	Prob. Untested Cell has	0.2000	0.0000	0.2000	0.0000
Gas Cell Depth	0.00000	0.00000	Cond. Play Prob.	1.0000	0.0000	1.0000	0.0000
			Uncond. Play Prob.	1.0000	0.0000	1.0000	0.0000
			Prob. Exceed Cutoff	1.0000	0.0000	1.0000	0.0000
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000
							0.0000

UNCONVENTIONAL RESOURCES for Intermediate Bakken, 3111 C:\UNCONV\FEDCONTI\BAKKEN\3111.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
NONASSOCIATED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	1479.38	460.817	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00475	0.00707	.....	.....	.....	.....	.....
Cond. Play Potential	7.02962	2.20649	4.05071	5.45421	6.70698	8.24750	11.1051
Uncond. Play Potential	7.02962	2.20649	4.05071	5.45421	6.70698	8.24750	11.1051
ASSOCIATED-DISSOLVED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	1479.38	460.817	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00380	0.00565	.....	.....	.....	.....	.....
Cond. Play Potential	5.62370	1.76519	3.24056	4.36337	5.36559	6.59800	8.88411
Uncond. Play Potential	5.62370	1.76519	3.24056	4.36337	5.36559	6.59800	8.88411
TOTAL GAS (10 ⁹ CF)							
No. Prod. Untested Cells	1479.38	460.817	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00380	0.00565	.....	.....	.....	.....	.....
Cond. Play Potential	5.62370	1.76519	3.24056	4.36337	5.36559	6.59800	8.88411
Uncond. Play Potential	5.62370	1.76519	3.24056	4.36337	5.36559	6.59800	8.88411
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Outlying Bakken, 3112	Williston Basin	31	Schmoker	8-3-94

Play Type	Play Probability	Success Ratio	Scenario
Oil	0.700	0.100	1 scenario; 640 acres; Crovelli
Geologic Variables	F100	F95	
Oil EUR* (10^6 BBL)	0.00000	0.00026	
NA Gas EUR* (10^9 CF)	0.00000	(0.00000)	
Oil Cells Depth (10^3 Ft)	7.00000	(7.60000)	
Gas Cells Depth (10^3 Ft)	0.00000	(0.00000)	
Number of Untested Cells	1.080	(3601)	
		(6752)	
		8643	(10083)
			(11524)
			12964

* EUR = Estimated Ultimate Recovery

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Gas-Oil Ratio Expected Liquids/Gas Ratio

CF/BBL	BBL/10^6 CF	Estimated % of resource in subplay
800.0000	0.0000	5.000000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Resource	Resource	Resource	NGL
	# Cells			Oil	NA Gas	AD Gas	Gas/HC	NA Gas
Oil Cell Depth	8.83666	0.83417	Prob. Untested Cell has	0.1000	0.0000	0.1000	0.1000	0.0000
Gas Cell Depth	0.00000	0.00000	Cond. Play Prob.	1.0000	0.0000	1.0000	0.0000	0.0000
			Uncond. Play Prob.	0.7000	0.0000	0.7000	0.7000	0.0000
			Prob. Exceed Cutoff	1.0000	0.0000			0.0000
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Outlying Bakken, 3112 C:\UNCONV\FEDCONTI\BAKKEN\3112.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	818.985	255.854	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00071	0.00076	.....	.....	.....	.....	.....
Cond. Play Potential	0.58271	0.18334	0.33532	0.45181	0.55584	0.68384	0.92140
Uncond. Play Potential	0.40790	0.30795	0.00000	0.00000	0.46708	0.62217	0.87244
NONASSOCIATED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
ASSOCIATED-DISSOLVED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	818.985	255.854	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00057	0.00061	.....	.....	.....	.....	.....
Cond. Play Potential	0.46617	0.14667	0.26825	0.36145	0.44468	0.54707	0.73712
Uncond. Play Potential	0.32632	0.24636	0.00000	0.00000	0.37366	0.49774	0.69795
TOTAL GAS (10 ⁹ CF)							
No. Prod. Untested Cells	818.985	255.854	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00057	0.00061	.....	.....	.....	.....	.....
Cond. Play Potential	0.46617	0.14667	0.26825	0.36145	0.44468	0.54707	0.73712
Uncond. Play Potential	0.32632	0.24636	0.00000	0.00000	0.37366	0.49774	0.69795
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

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INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Southern Margin Niobrara-shallow, 3113	Williston basin	31	Schmoker	8/22/94

Play Type	Play Probability	Success Ratio	Scenario					
Gas	0.750	0.330	1 scenario: 320 acres; Crovelli					
Geologic Variables	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	0.00000	0.00000	(0.00000)	(0.00000)	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.00600	0.02500	0.07700	0.16000	0.29000	0.53800	0.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	0.00000	0.00000	(0.00000)	(0.00000)	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	0.50000	(0.66666)	(0.83333)	1.00000	(1.20000)	(1.53333)	1.80000	
Number of Untested Cells	50	(20030)	(40010)	59990	(89992)	(139997)	180000	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
0.000000	0.0000	2.000000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Oil	NA Gas	AD Gas	Gas/HC	NGL	NA Gas	AD Gas	Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.3300	0.0000	0.3300	0.3300	0.0000	0.0000	0.0000	0.0000
Gas Cell Depth	1.04000	0.27760	Cond. Play Prob.	0.0000	1.00000	0.0000	1.00000	1.00000	0.0000	0.0000	0.0000	0.0000
			Uncond. Play Prob.	0.0000	0.7500	0.0000	0.7500	0.7500	0.0000	0.0000	0.0000	0.0000
			Prob. Exceed Cutoff	0.0000	1.00000							
			Play Potential Cutoffs	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Southern Margin Niobrara-shallow, 3113 C:\UNCONV\FEDCONT\PLAINS\3113.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NONASSOCIATED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	22688.2	12771.8	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00223	0.00212	.....	.....	.....	.....	.....
Cond. Play Potential	50.5152	28.4381	18.5693	30.8989	44.0192	62.7105	104.349
Uncond. Play Potential	37.8864	32.9394	0.00000	0.00000	35.1164	55.2117	96.7624
ASSOCIATED-DISSOLVED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL GAS (10 ⁹ CF)							
No. Prod. Untested Cells	22688.2	12771.8	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00223	0.00212	.....	.....	.....	.....	.....
Cond. Play Potential	50.5152	28.4381	18.5693	30.8989	44.0192	62.7105	104.349
Uncond. Play Potential	37.8864	32.9394	0.00000	0.00000	35.1164	55.2117	96.7624
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

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INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Cloverly/Frontier, 3740	SW Wyoming Basins	37	Law	7-11-94

Play Type	Play Probability	Success Ratio	Scenario					
Gas	1.000	0.600	2 of 2 scenarios: 80 acres; 0.5 prob.; uniform					
Geologic Variables	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.04600	0.24000	0.70000	1.80000	3.70000	13.00000	0.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	11.50000	(13.33333)	(15.16666)	17.00000	(18.66666)	(20.33333)	22.00000	
Number of Untested Cells	4000	(9400)	(31000)	(58000)	(85000)	(106600)	1120000	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
0.0000000	15.000	75.00000

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GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL
	# Cells	57999.5	31176.9	Oil NA Gas AD Gas Gas/HC	NA Gas AD Gas Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000 0.6000 0.0000 0.6000 0.6000	----- 0.0000 0.0000 0.0000 0.6000
Gas Cell Depth	16.9083	2.30477	Cond. Play Prob.	0.0000 1.0000 0.0000 1.0000 1.0000	----- 0.0000 0.0000 0.0000 1.0000
			Uncond. Play Prob.	0.0000 1.0000 0.0000 1.0000 1.0000	----- 0.0000 0.0000 0.0000 1.0000
			Prob. Exceed Cutoff	0.0000 1.0000	----- 0.0000 0.0000 0.0000 1.0000
			play Potential Cutoffs	0.0000 0.0000 0.0000 0.0000 0.0000	----- 0.0000 0.0000 0.0000 0.0000

UNCONVENTIONAL RESOURCES for Cloverly/Frontier, 3740 C:\UNCONV\FEDCONTI\SW-WYO\3740-80.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

No. Prod. Untested Cells	34799.7	18706.5	.....	.....	.....	.....	.....
Est. Ultimate Recovery	1.07044	1.47396	.....	.....	.....	.....	.....
Cond. Play Potential	37250.9	20026.0	14323.3	23356.7	32810.2	46089.8	75157.8
Uncond. Play Potential	37250.9	20026.0	14323.3	23356.7	32810.2	46089.8	75157.8

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁹ CF)

No. Prod. Untested Cells	34799.7	18706.5	.....	.....	.....	.....	.....
Est. Ultimate Recovery	1.07044	1.47396	.....	.....	.....	.....	.....
Cond. Play Potential	37250.9	20026.0	14323.3	23356.7	32810.2	46089.8	75157.8
Uncond. Play Potential	37250.9	20026.0	14323.3	23356.7	32810.2	46089.8	75157.8

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

No. Prod. Untested Cells	34799.7	18706.5	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.01606	0.02211	.....	.....	.....	.....	.....
Cond. Play Potential	558.764	300.391	214.849	350.350	492.152	691.348	1127.37
Uncond. Play Potential	558.764	300.391	214.849	350.350	492.152	691.348	1127.37

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date				
Cloverly/Frontier, 3740	SW Wyoming Basins	37	Law	7-11-94				
Play Type	Play Probability	Success Ratio	Scenario					
Gas	1.000	0.600	1 of 2 scenarios: 160 acres; 0.5 prob.; uniform					
Geologic Variables	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.04600	0.24000	0.70000	1.80000	3.70000	13.0000	0.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000	0.00000
Gas Cells Depth (10^3 Ft)	11.5000	(13.3333)	(15.1666)	17.0000	(18.6666)	(20.3333)	22.0000	
Number of Untested Cells	2000	(4700)	(15500)	(29000)	(42500)	(53300)	56000	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
0.0000000	15.000	75.00000

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GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Resource	Resource	Resource	NGL
	# Cells			Oil	NA Gas	AD Gas	Gas/HC	NA Gas
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.6000	0.0000	0.6000	0.6000
Gas Cell Depth	16.9083	2.30477	Cond. Play Prob.	0.0000	1.0000	0.0000	1.0000	0.0000
			Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000			
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Cloverly/Frontier, 3740

C:\UNCONV\FEDCONTI\SW-WYO\3740-160.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁻⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁻⁹ CF)

No. Prod. Untested Cells	17399.7	9353.45	.....	.....	.....	.....	.....
Est. Ultimate Recovery	1.07044	1.47396	.....	.....	.....	.....	.....
Cond. Play Potential	18625.3	10014.2	7160.73	11677.5	16404.5	23044.9	37580.9
Uncond. Play Potential	18625.3	10014.2	7160.73	11677.5	16404.5	23044.9	37580.9

ASSOCIATED-DISSOLVED GAS
(10⁻⁹ CF)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁻⁹ CF)

No. Prod. Untested Cells	17399.7	9353.45	.....	.....	.....	.....	.....
Est. Ultimate Recovery	1.07044	1.47396	.....	.....	.....	.....	.....
Cond. Play Potential	18625.3	10014.2	7160.73	11677.5	16404.5	23044.9	37580.9
Uncond. Play Potential	18625.3	10014.2	7160.73	11677.5	16404.5	23044.9	37580.9

LIQUIDS in NONASSOC. GAS
(10⁻⁶ BBL)

No. Prod. Untested Cells	17399.7	9353.45	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.01606	0.02211	.....	.....	.....	.....	.....
Cond. Play Potential	279.379	150.213	107.411	175.162	246.067	345.674	563.714
Uncond. Play Potential	279.379	150.213	107.411	175.162	246.067	345.674	563.714

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INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Mesaverde, 3741	SW Wyoming Basins	37	Law	7-11-94

Play Type	Play Probability	Success Ratio	Scenario	
Gas	1.000	0.700	2 of 2 scenarios; 80 acres; 0.7 prob.; Crovelli	
Geologic Variables	F100	F95	F75	F50
Oil EUR* (10^6 BBL)	0.00000 (0.00000)	(0.00000)	0.00000 (0.00000)	(0.00000)
NA Gas EUR* (10^9 CF)	0.00000 (0.05500)	0.33000 (0.90000)	0.00000 (1.90000)	3.50000 (25.00000)
Oil Cells Depth (10^3 Ft)	0.00000 (0.00000)	(0.00000)	0.00000 (0.00000)	(0.00000)
Gas Cells Depth (10^3 Ft)	8.50000 (10.66666)	(12.83333)	15.0000 (17.0000)	(19.0000) 21.0000
Number of Untested Cells	3200 (20244)	(41550)	54333 (58889)	(63444) 68000

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio
CF/BBL	BBL/10^6 CF
0.000000	15.0000

Estimated % of resource in subplay
80.00000

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GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource			NGL
	48422.5	14355.7		Oil	NA Gas	AD Gas	NA Gas
	# Cells	48422.5	14355.7				AD Gas
							Total
Oil Cell Depth	0.00000	0.00000	Prob. untested Cell has	0.0000	0.7000	0.0000	0.7000
Gas Cell Depth	14.9083	2.74349	Cond. Play Prob.	0.0000	1.0000	0.0000	0.0000
			Uncond. Play Prob.	0.0000	1.0000	1.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000	0.0000	0.0000
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Mesaverde, 3741 C:\UNCONV\FEDCONTI\SW-WYO\3741-80.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁻⁶ BBL)							
No. Prod. Untested Cells							
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NONASSOCIATED GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	33895.8	10049.5	.....	.....	.....	.....	.....
Est. Ultimate Recovery	1.43690	2.65024	.....	.....	.....	.....	.....
Cond. Play Potential	48704.8	14448.4	28958.6	38387.0	46693.6	56797.6	75289.9
Uncond. Play Potential	48704.8	14448.4	28958.6	38387.0	46693.6	56797.6	75289.9
ASSOCIATED-DISSOLVED GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	33895.8	10049.5	.....	.....	.....	.....	.....
Est. Ultimate Recovery	1.43690	2.65024	.....	.....	.....	.....	.....
Cond. Play Potential	48704.8	14448.4	28958.6	38387.0	46693.6	56797.6	75289.9
Uncond. Play Potential	48704.8	14448.4	28958.6	38387.0	46693.6	56797.6	75289.9
LIQUIDS in NONASSOC. GAS (10 ⁻⁶ BBL)							
No. Prod. Untested Cells	33895.8	10049.5	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.02155	0.03975	.....	.....	.....	.....	.....
Cond. Play Potential	730.572	216.726	434.379	575.805	700.404	851.964	1129.35
Uncond. Play Potential	730.572	216.726	434.379	575.805	700.404	851.964	1129.35

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Mesaverde, 3741	SW Wyoming Basins	37	Law	7-11-94

Play Type	Play Probability	Success Ratio	Scenario	
Gas	1.000	0.700	1 of 2 scenarios; 160 acres; 0.3 prob.; Crovelli	
Geologic Variables	F100	F95	F75	F50
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	0.00000	(0.00000)
NA Gas EUR* (10^9 CF)	0.00000	0.05500	0.33000	1.90000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	0.00000	(0.00000)
Gas Cells Depth (10^3 Ft)	8.50000	(10.6666)	(12.8333)	15.0000
Number of Untested Cells	1600	(10067)	(20650)	(27000)

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
0.000000	15.000	80.00000

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GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL
	# Cells			Oil	AD Gas
Oil Cell Depth	0.00000	0.00000	Prob. Unrested Cell has	0.0000	0.7000
Gas Cell Depth	14.9083	2.74349	Cond. Play Prob.	0.0000	1.0000
			Uncond. Play Prob.	0.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000
			Play Potential Cutoffs	0.0000	0.0000
				0.0000	0.0000
				0.0000	0.0000

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UNCONVENTIONAL RESOURCES for Mesaverde, 3741 C:\UNCONV\FEDCONTI\SW-WYO\3741-160.LIS

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NONASSOCIATED GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	16871.7	5016.97	.....	.....	.....	.....	.....
Est. Ultimate Recovery	1.43690	2.65024	.....	.....	.....	.....	.....
Cond. Play Potential	24242.9	7217.10	14386.8	19089.1	23235.2	28281.8	37525.6
Uncond. Play Potential	24242.9	7217.10	14386.8	19089.1	23235.2	28281.8	37525.6
ASSOCIATED-DISSOLVED GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	16871.7	5016.97	.....	.....	.....	.....	.....
Est. Ultimate Recovery	1.43690	2.65024	.....	.....	.....	.....	.....
Cond. Play Potential	24242.9	7217.10	14386.8	19089.1	23235.2	28281.8	37525.6
Uncond. Play Potential	24242.9	7217.10	14386.8	19089.1	23235.2	28281.8	37525.6
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)							
No. Prod. Untested Cells	16871.7	5016.97	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.02155	0.03975	.....	.....	.....	.....	.....
Cond. Play Potential	363.644	108.256	215.802	286.336	348.528	424.227	562.885
Uncond. Play Potential	363.644	108.256	215.802	286.336	348.528	424.227	562.885

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UNCLE 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\SW-WYO\3742-80.LIS (from 3742-80.PLA) 8-Jul-1997 16:32:37 Run No. 1

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Lewis, 3742	SW Wyoming Basins	37	Law	7-11-94

Play Type	Play Probability	Success Ratio	Scenario
Gas	1.000	0.700	1 of 2 scenarios; 80 acres; 0.5 prob.; Crovelli
Geologic Variables	F100	F95	F50
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.00100	0.60000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	10.5000	(11.0000)	12.0000
Number of Untested Cells	800	(11181)	31944
		(24158)	(33296)
			(34648)
			36000

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
0.000000	15.000	75.00000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL
	# Cells			Oil	AD Gas
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has Cond. Play Prob.	0.00000 0.70000	0.70000 0.00000
Gas Cell Depth	12.8770	1.90450	Uncond. Play Prob.	0.00000 1.00000	0.00000 1.00000
			Prob. Exceed Cutoff	0.00000 1.00000	0.00000 1.00000
			Play Potential Cutoffs	0.00000 0.00000	0.00000 0.00000

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UNCONVENTIONAL RESOURCES for Lewis, 3742 C:\UNCONV\FEDCONTI\SW-WYO\3742-80.LIS Crovelli & Balay

	Mean	Std.	Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)								
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NONASSOCIATED GAS (10 ⁹ CF)								
No. Prod. Untested Cells	19292.9	5649.27	.....	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.98597	1.50185	.....	.....	.....	.....	.....	.....
Cond. Play Potential	19022.2	5573.91	11384.9	15041.8	18254.6	22153.7	29269.6	29269.6
Uncond. Play Potential	19022.2	5573.91	11384.9	15041.8	18254.6	22153.7	29269.6	29269.6
ASSOCIATED-DISSOLVED GAS (10 ⁹ CF)								
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL GAS (10 ⁹ CF)								
No. Prod. Untested Cells	19292.9	5649.27	.....	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.98597	1.50185	.....	.....	.....	.....	.....	.....
Cond. Play Potential	19022.2	5573.91	11384.9	15041.8	18254.6	22153.7	29269.6	29269.6
Uncond. Play Potential	19022.2	5573.91	11384.9	15041.8	18254.6	22153.7	29269.6	29269.6
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)								
No. Prod. Untested Cells	19292.9	5649.27	.....	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.01479	0.02253	.....	.....	.....	.....	.....	.....
Cond. Play Potential	285.333	83.6086	170.774	225.627	273.820	332.306	439.043	439.043
Uncond. Play Potential	285.333	83.6086	170.774	225.627	273.820	332.306	439.043	439.043

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INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Lewis, 3742	SW Wyoming Basins	37	Law	7-11-94

Play Type	Play Probability	Success Ratio	Scenario					
Gas	1.000	0.700	2 of 2 scenarios; 160 acres; 0.5 prob.; Crovelli					
Geologic Variables	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.00100	0.07000	0.60000	1.55000	3.80000	13.00000	0.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	10.5000	(11.0000)	(11.5000)	12.0000	(13.7500)	(16.6666)	19.0000	
Number of Untested Cells	400	(5569)	(12031)	15908	(16605)	(17303)	18000	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
0.000000	15.000	75.00000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL
	# Cells	13738.6	4028.99	Oil NA Gas AD Gas Gas/HC	NA Gas AD Gas Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000 0.7000 0.0000 0.7000 0.7000	0.0000 0.0000 0.7000
Gas Cell Depth	12.8770	1.90450	Cond. Play Prob.	0.0000 1.0000 0.0000 1.0000 1.0000	0.0000 0.0000 1.0000
			Uncond. Play Prob.	0.0000 1.0000 0.0000 1.0000 1.0000	0.0000 0.0000 1.0000
			Prob. Exceed Cutoff	0.0000 1.0000	
			Play Potential Cutoffs	0.0000 0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000

UNCONVENTIONAL RESOURCES for Lewis, 3742 C:\UNCONV\FEDCONTI\SW-WYO\3742-160.LIS Crovelli & Ballay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁻⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NONASSOCIATED GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	9617.02	2820.81	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.98597	1.50185	.....	.....	.....	.....	.....
Cond. Play Potential	9482.08	2785.12	5667.85	7493.18	9097.75	11045.9	14603.2
Uncond. Play Potential	9482.08	2785.12	5667.85	7493.18	9097.75	11045.9	14603.2
ASSOCIATED-DISSOLVED GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	9617.02	2820.81	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.98597	1.50185	.....	.....	.....	.....	.....
Cond. Play Potential	9482.08	2785.12	5667.85	7493.18	9097.75	11045.9	14603.2
Uncond. Play Potential	9482.08	2785.12	5667.85	7493.18	9097.75	11045.9	14603.2
LIQUIDS in NONASSOC. GAS (10 ⁻⁶ BBL)							
No. Prod. Untested Cells	9617.02	2820.81	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.01479	0.02253	.....	.....	.....	.....	.....
Cond. Play Potential	142.231	41.7768	85.0178	112.398	136.466	165.689	219.049
Uncond. Play Potential	142.231	41.7768	85.0178	112.398	136.466	165.689	219.049

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UNCLE 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\SW-WYO\3743-80.LIS (from 3743-80.PLA) 8-Jul-1997 16:37:59 Run No. 1

INPUT SUMMARY

Play Name	Province Name			Province #	Evaluator	Assessment Date
Lance/Fox Hills, 3743	SW Wyoming Basins			37	Law	7-11-94
Play Type	Play Probability	Success Ratio	Scenario			
Gas	1.000	0.700				
Geologic Variables	F100	F95	F75	F50	F25	F05
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)
NA Gas EUR* (10^9 CF)	0.00000	0.11000	0.42500	0.80000	1.20000	1.90000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)
Gas Cells Depth (10^3 Ft)	9.00000	(9.66666)	(10.33333)	11.0000	(12.0000)	(13.6666)
Number of Untested Cells	2000	(3700)	(10500)	(19000)	(27500)	(34300)

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10~6 CF	Estimated % of resource in subplay
0.0000000	10.000	80.00000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource		NGL				
	# Cells			Oil	NA Gas	AD Gas	Gas/HC	NA Gas	AD Gas	Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.7000	0.0000	0.7000	0.7000	0.0000	0.7000
Gas Cell Depth	11.2916	1.29032	Cond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000	0.0000	1.0000
			Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000	0.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000					
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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UNCONVENTIONAL RESOURCES for Lance/Fox Hills, 3743

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	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁻⁶ BBL)							
No. Prod.	0.00000	0.00000	0	0	0	0	0
Untested Cells	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁻⁹ CF)

No. Prod.	13299.7	6870.76	.....	.....	.....	.....	.....
Untested Cells	0.72350	0.51360	.....	.....	.....	.....	.....
Est. Ultimate Recovery	9622.30	4971.35	3840.66	6157.70	8548.76	11868.3	19028.3
Cond. Play Potential	9622.30	4971.35	3840.66	6157.70	8548.76	11868.3	19028.3
Uncond. Play Potential	9622.30	4971.35	3840.66	6157.70	8548.76	11868.3	19028.3

ASSOCIATED-DISSOLVED GAS
(10⁻⁹ CF)

No. Prod.	0.00000	0.00000	0	0	0	0	0
Untested Cells	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁻⁹ CF)

No. Prod.	13299.7	6870.76	.....	.....	.....	.....	.....
Untested Cells	0.72350	0.51360	.....	.....	.....	.....	.....
Est. Ultimate Recovery	9622.30	4971.35	3840.66	6157.70	8548.76	11868.3	19028.3
Cond. Play Potential	9622.30	4971.35	3840.66	6157.70	8548.76	11868.3	19028.3
Uncond. Play Potential	9622.30	4971.35	3840.66	6157.70	8548.76	11868.3	19028.3

LIQUIDS in NONASSOC. GAS
(10⁻⁶ BBL)

No. Prod.	13299.7	6870.76	.....	.....	.....	.....	.....
Untested Cells	0.00724	0.00514	.....	.....	.....	.....	.....
Est. Ultimate Recovery	96.2230	49.7135	38.4066	61.5770	85.4876	118.683	190.283
Cond. Play Potential	96.2230	49.7135	38.4066	61.5770	85.4876	118.683	190.283
Uncond. Play Potential	96.2230	49.7135	38.4066	61.5770	85.4876	118.683	190.283

INPUT SUMMARY

Play Name	Province Name			Province #	Evaluator	Assessment Date
Lance/Fox Hills, 3743	SW Wyoming Basins			37	Law	7-11-94
Play Type	Play Probability	Success Ratio	Scenario			
Gas	1.000	0.700	1 of 2 scenarios; 160 acres; 0.3 prob.; uniform			
Geologic Variables	F100	F95	F75	F50	F25	F05
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.11000	0.42500	0.80000	1.20000	1.90000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	9.00000	(9.66666)	(10.3333)	11.0000	(12.0000)	(13.6666)
Number of Untested Cells	1000	(1850)	(5250)	(9500)	(13750)	(17150)

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
0.0000000	10.000	80.00000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond. # Cells	Mean	Std. Dev.	Resource	NGL
Cond. # Cells	Mean	Std. Dev.	Oil NA Gas AD Gas Gas /HC	NA Gas AD Gas Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000 0.7000 0.0000 0.7000
Gas Cell Depth	11.2916	1.29032	Cond. Play Prob.	0.0000 1.0000 0.0000 1.0000
			Uncond. Play Prob.	0.0000 1.0000 0.0000 1.0000
			Prob. Exceed Cutoff	0.0000 1.0000 0.0000 1.0000
			Play Potential Cutoffs	0.0000 0.0000 0.0000 0.0000

UNCONVENTIONAL RESOURCES for Lance/Fox Hills, 3743

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	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS

	Mean	Std. Dev.	F95	F75	F50	F25	F05
(10⁻⁹ CF)							
No. Prod. Untested Cells	6649.65	3435.52	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.72350	0.51360	1920.03	3078.55	4224.14	5934.05	9514.58
Cond. Play Potential	4811.02	2485.95	1920.03	3078.55	4274.14	5934.05	9514.58
Uncond. Play Potential	4811.02	2485.95	1920.03	3078.55	4274.14	5934.05	9514.58

ASSOCIATED-DISSOLVED GAS

	Mean	Std. Dev.	F95	F75	F50	F25	F05
(10⁻⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁻⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
(10⁻⁹ CF)							
No. Prod. Untested Cells	6649.65	3435.52	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.72350	0.51360	1920.03	3078.55	4224.14	5934.05	9514.58
Cond. Play Potential	4811.02	2485.95	1920.03	3078.55	4274.14	5934.05	9514.58
Uncond. Play Potential	4811.02	2485.95	1920.03	3078.55	4274.14	5934.05	9514.58

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
(10⁶ BBL)							
No. Prod. Untested Cells	6649.65	3435.52	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00724	0.00514	19.2003	30.7855	42.7414	59.3405	95.1458
Cond. Play Potential	48.1102	24.8595	19.2003	30.7855	42.7414	59.3405	95.1458
Uncond. Play Potential	48.1102	24.8595	19.2003	30.7855	42.7414	59.3405	95.1458

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Fort Union, 3744	SW Wyoming Basins	37	Law	7-11-94

Play Type	Play Probability	Success Ratio	Scenario					
Gas	1.000	0.700	2 of 2 scenarios; 80 acres; 0.7 prob.; uniform					
Geologic Variables	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.05500	0.32000	0.65000	1.07500	1.80000	3.50000	0.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	9.50000	(9.73333)	(9.96666)	10.2000	(11.9000)	(14.7333)	17.0000	
Number of Untested Cells	320	(524)	(1340)	(2360)	(3380)	(4196)	4400	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio	Estimated % of resource in subplay
CF/BBL	BBL/10^-6 CF	65.00000
0.000000	10.000	

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GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL
	# Cells	2359.50	1177.79	Oil NA Gas AD Gas Gas/HC	NA Gas AD Gas Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000 0.7000 0.0000 0.7000	0.7000 0.0000 0.70000
Gas Cell Depth	11.1908	1.73486	Cond. Play Prob.	0.0000 1.0000 0.0000 1.0000	1.0000 0.0000 1.00000
			Uncond. Play Prob.	0.0000 1.0000 0.0000 1.0000	1.0000 0.0000 1.00000
			Prob. Exceed Cutoff	0.0000 1.0000	
			Play Potential Cutoffs	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.00000

UNCONVENTIONAL RESOURCES for Fort Union, 3744 C:\UNCONV\FEDCONTI\SW-WYO\3744-80.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NONASSOCIATED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	1651.65	824.757	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.51724	0.41674	.....	.....	.....	.....	.....
Cond. Play Potential	854.295	426.931	351.459	555.757	764.182	1050.77	1661.57
Uncond. Play Potential	854.295	426.931	351.459	555.757	764.182	1050.77	1661.57
ASSOCIATED-DISSOLVED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL GAS (10 ⁹ CF)							
No. Prod. Untested Cells	1651.65	824.757	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.51724	0.41674	.....	.....	.....	.....	.....
Cond. Play Potential	854.295	426.931	351.459	555.757	764.182	1050.77	1661.57
Uncond. Play Potential	854.295	426.931	351.459	555.757	764.182	1050.77	1661.57
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)							
No. Prod. Untested Cells	1651.65	824.757	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00517	0.0417	.....	.....	.....	.....	.....
Cond. Play Potential	8.54295	4.2631	3.51159	5.55757	7.64182	10.5077	16.6157
Uncond. Play Potential	8.54295	4.26931	3.51459	5.55757	7.64182	10.5077	16.6157

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INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Fort Union	WYoming Basins	37	Law	7-11-94

Play Type	Play Probability	Success Ratio	Scenario			Cutoff	
Gas	1.000	0.700	1 of 2 scenarios; 160 acres; 0.3 prob.; uniform				
Geologic Variables	F100	F95	F75	F50	F25	F05	F0
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.05500	0.32000	0.65000	1.07500	1.80000	3.50000
Oil Cells Depth (10^3 FT)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000
Gas Cells Depth (10^3 FT)	9.50000	(9.73333)	(9.96666)	10.2000	(11.9000)	(14.733)	17.0000
Number of Untested Cells	160	(262)	(670)	(1180)	(1690)	(2088)	2200

* EITB = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/ 10^{-6} CF	Estimated % of resource in subplay
0.000000	10.000	65.00000

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UNCONVENTIONAL RESOURCES for Fort Union, 3744

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	Mean	Std.	Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)								
No. Prod. Untested Cells								
0.00000	0.00000	0	0	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NONASSOCIATED GAS (10 ⁹ CF)								
No. Prod. Untested Cells	825.650	412.528	.....	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.51724	0.41674	.....	.....	.....	.....	.....	.....
Cond. Play Potential	427.057	213.711	175.478	277.636	381.906	525.337	831.171	831.171
Uncond. Play Potential	427.057	213.711	175.478	277.636	381.906	525.337	831.171	831.171
ASSOCIATED-DISSOLVED GAS (10 ⁹ CF)								
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL GAS (10 ⁹ CF)								
No. Prod. Untested Cells	825.650	412.528	.....	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.51724	0.41674	.....	.....	.....	.....	.....	.....
Cond. Play Potential	427.057	213.711	175.478	277.636	381.906	525.337	831.171	831.171
Uncond. Play Potential	427.057	213.711	175.478	277.636	381.906	525.337	831.171	831.171
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)								
No. Prod. Untested Cells	825.650	412.528	.....	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00517	0.00417	.....	.....	.....	.....	.....	.....
Cond. Play Potential	4.27057	2.13711	1.75478	2.77636	3.81906	5.25337	8.31171	8.31171
Uncond. Play Potential	4.27057	2.13711	1.75478	2.77636	3.81906	5.25337	8.31171	8.31171

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
J Sandstone Deep Gas (Wattenberg), 3906	Denver Basin	39	Higley	8/10/94

Play Type	Play Probability	Success Ratio	Scenario				
Gas	1.000	0.600	1 scenario; 320 acres; Crovelli				
Geologic Variables	F100	F95	F75	F50	F25	F05	F0
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	0.00000	(0.00000)	(0.00000)	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.09200	0.26000	0.52000	0.88000	1.20000	2.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	0.00000	(0.00000)	(0.00000)	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	7.00000	(7.20000)	(7.40000)	7.60000	(7.95000)	(8.53333)	9.00000
Number of Untested Cells	100	(627)	(1153)	1680	(3085)	(5427)	7300

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay	
0.000000	0.0900	5.000000	

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GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Resource	Resource	Resource	NGL
	# Cells	2314.80	1590.98	Oil	NA Gas	AD Gas	Gas/HC	NA Gas
		2314.80	1590.98					AD Gas
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.6000	0.0000	0.6000	Total
Gas Cell Depth	7.72041	0.43284	Cond. Play Prob.	0.0000	1.0000	0.0000	1.0000	
			Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000	
			Prob. Exceed Cutoff	0.0000	1.0000	0.0000	1.0000	
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	

UNCONVENTIONAL RESOURCES for J Sandstone Deep Gas (Wattenberg), 3906 C:\UNCONV\FEDCONT\DENVER\3906.LIS

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NONASSOCIATED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	1388.88	954.882	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.02990	0.02016	.....	.....	.....	.....	.....
Cond. Play Potential	41.5275	28.5609	12.2920	22.4869	34.2163	52.0639	95.2450
Uncond. Play Potential	41.5275	28.5609	12.2920	22.4869	34.2163	52.0639	95.2450
ASSOCIATED-DISSOLVED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL GAS (10 ⁹ CF)							
No. Prod. Untested Cells	1388.88	954.882	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.02990	0.02016	.....	.....	.....	.....	.....
Cond. Play Potential	41.5275	28.5609	12.2920	22.4869	34.2163	52.0639	95.2450
Uncond. Play Potential	41.5275	28.5609	12.2920	22.4869	34.2163	52.0639	95.2450
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)							
No. Prod. Untested Cells	1388.88	954.882	.....	.....	.....	.....	.....
Est. Ultimate Recovery	<.00001	<.00001	.....	.....	.....	.....	.....
Cond. Play Potential	0.00374	0.00257	0.00111	0.00202	0.00308	0.00469	0.00857
Uncond. Play Potential	0.00374	0.00257	0.00111	0.00202	0.00308	0.00469	0.00857

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INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Fractured Niagara	Greater North	3921	R. Poliastro	7/25/94
	Denver Basin	39		

Play Type		Play Probability	Success Ratio	Scenario				Cutoff
Oil	1.000	0.500		1 scenario: 640 acres; Crovelli				
Geologic Variables		F100	F95	F75	F50	F25	F05	F0
Oil EUR*	(10^6 BBL)	0.00000	0.00098					
NA Gas EUR*	(10^9 CF)	0.00000	(0.00000)	0.00460	0.01300	0.02300	0.04300	0.10000
Oil Cells Depth	(10^3 Ft)	4.00000	(5.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	0.00000
Gas Cells Depth	(10^3 Ft)	0.00000	(0.00000)	(6.00000)	(7.00000)	(8.00000)	(9.00000)	10.00000
Number of Untested Cells		820	(1579)	(2528)	3097	(3698)	(4299)	4900

* EIR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF
2000 000	-
2000 000	0 0000

VARIABLES AND PROBABILITIES OF OCCURRENCE		
Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
2000.000	0.0000	5.00000

UNCONVENTIONAL RESOURCES for Fractured Niobrara Greater North, 3921 C:\UNCONV\FEDCONT\DENVER\3921.LIS Crovelli & Balay

	Mean	Std.	F95	F75	F50	F25	F05
OIL (10^6 BBL)							
No. Prod. Untested Cells	1526.18	434.839	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00087	0.00086	.....	.....	.....	.....	.....
Cond. Play Potential	1.33216	0.38104	0.80750	1.06007	1.28080	1.54748	2.03152
Uncond. Play Potential	1.33216	0.38104	0.80750	1.06007	1.28080	1.54748	2.03152
NONASSOCIATED GAS (10^9 CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
ASSOCIATED-DISSOLVED GAS (10^9 CF)							
No. Prod. Untested Cells	1526.18	434.839	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00175	0.00172	.....	.....	.....	.....	.....
Cond. Play Potential	2.66432	0.76207	1.61499	2.12014	2.56159	3.09496	4.06303
Uncond. Play Potential	2.66432	0.76207	1.61499	2.12014	2.56159	3.09496	4.06303
TOTAL GAS (10^9 CF)							
No. Prod. Untested Cells	1526.18	434.839	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00175	0.00172	.....	.....	.....	.....	.....
Cond. Play Potential	2.66432	0.76207	1.61499	2.12014	2.56159	3.09496	4.06303
Uncond. Play Potential	2.66432	0.76207	1.61499	2.12014	2.56159	3.09496	4.06303
LIQUIDS in NONASSOC. GAS (10^6 BBL)							
No. Prod. Untested Cells	0.00000	0	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

INPUT SUMMARY

Play Name	Province Name	Assessment Date
Austin Mid-dip Oil - Area 3, 4749	Western Gulf	47 Schenk 6/13/94

Play Type	Play Probability	Success Ratio	Scenario	F0	F05	F25	F50	F75	F95	F100	Geologic Variables
Oil		1.000	0.250		1 scenario; 1280 acres; Crovelli						
Oil EUR* (10^6 BBL)	0.00000	0.00260		0.01350	0.04500	0.09500	0.23000				
NA Gas EUR* (10^9 CF)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	
Oil Cells Depth (10^3 Ft)	4.00000	(5.00000)	(6.00000)	7.00000	(8.25000)	(10.3333)	12.0000				
Gas Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	
Number of Untested Cells	2200	(4637)	(7684)	9512	(10341)	(11171)	(12000)				

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
2400.000	0.00000	7.0000000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL					
	# Cells			Oil	NA Gas	AD Gas	Gas/HC	NA Gas	AD Gas	Total
Oil Cell Depth	7.27291	1.71017	Prob. Untested Cell has	0.2500	0.0000	0.2500				
Gas Cell Depth	0.00000	0.00000	Cond. Play Prob.	1.0000	0.0000	1.0000				
			Uncond. Play Prob.	1.0000	0.0000	1.0000				
			Prob. Exceed Cutoff	1.0000	0.0000					
Play Potential Cutoffs		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Austin Mid-dip Oil - Area 3, 4749 C:\UNCN\FCDCONTI\GULF\4749.LIS

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁻⁶ BBL)							
No. Prod. Untested Cells	2191.03	537.634	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00628	0.01001	.....	.....	.....	.....	.....
Cond. Play Potential	13.7632	3.40955	8.94200	11.3318	13.3594	15.7499	19.9590
Uncond. Play Potential	13.7632	3.40955	8.94200	11.3318	13.3594	15.7499	19.9590

NONASSOCIATED GAS
(10⁻⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
NONASSOCIATED GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

ASSOCIATED-DISSOLVED GAS
(10⁻⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
ASSOCIATED-DISSOLVED GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	2191.03	537.634	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.01508	0.02402	.....	.....	.....	.....	.....
Cond. Play Potential	33.0318	8.18293	21.4608	27.1962	32.0626	37.7997	47.9017
Uncond. Play Potential	33.0318	8.18293	21.4608	27.1962	32.0626	37.7997	47.9017

TOTAL GAS
(10⁻⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
TOTAL GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	2191.03	537.634	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.01508	0.02402	.....	.....	.....	.....	.....
Cond. Play Potential	33.0318	8.18293	21.4608	27.1962	32.0626	37.7997	47.9017
Uncond. Play Potential	33.0318	8.18293	21.4608	27.1962	32.0626	37.7997	47.9017

LIQUIDS in NONASSOC. GAS
(10⁻⁶ BBL)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
LIQUIDS in NONASSOC. GAS (10 ⁻⁶ BBL)							
No. Prod. Untested Cells	0.00000	0	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

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INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date				
Cotton Valley Blanket Sandstones, 4923	LA/MS Salt Basins	49	Schenk	6/13/94				
Play Type	Play Probability	Success Ratio	Scenario					
Gas	1.000	1.000	1 scenario; 640 acres; Crovelli					
Geologic Variables	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.00500	0.16500	0.83000	3.10000	14.00000	31.00000	0.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	7.00000	(7.66666)	(8.33333)	9.00000	(9.75000)	(11.00000)	(12.00000)	12.00000
Number of Untested Cells	350	(831)	(1433)	1794	(2129)	(2465)	(2800)	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio	Estimated % of resource in subplay
CF/BBL	BBL/10^6 CF	
0.000000	25.000	2.500000

G E O L O G I C V A R I A B L E S and P R O B A B I L I T I E S O F O C C U R R E N C E

Cond.	# Cells	Mean	Std. Dev.	Resource	Oil	NA Gas	AD Gas	Gas/HC	NGL	NA Gas	AD Gas	Total
	# Cells	1740.20	522.063									
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.0000	1.0000	0.0000	1.0000	1.0000	0.0000	0.0000	1.0000
Gas Cell Depth	9.12708	1.06618	Cond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000	1.0000	0.0000	0.0000	1.0000
			Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000	1.0000	0.0000	0.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000							
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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UNCONVENTIONAL RESOURCES for Cotton Valley Blanket Sandstones, 4923 C:\UNCONV\FEDCONTI\GULF\4923.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

No. Prod. Untested Cells	1740.20	522.063	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.08669	0.14195	.....	.....	.....	.....	.....
Cond. Play Potential	150.864	45.6453	88.7422	118.269	144.400	176.304	234.965
Uncond. Play Potential	150.864	45.6453	88.7422	118.269	144.400	176.304	234.965

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁹ CF)

No. Prod. Untested Cells	1740.20	522.063	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.08669	0.14195	.....	.....	.....	.....	.....
Cond. Play Potential	150.864	45.6453	88.7422	118.269	144.400	176.304	234.965
Uncond. Play Potential	150.864	45.6453	88.7422	118.269	144.400	176.304	234.965

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

No. Prod. Untested Cells	1740.20	522.063	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00217	0.00355	.....	.....	.....	.....	.....
Cond. Play Potential	3.77161	1.14113	2.21856	2.95673	3.61000	4.40760	5.87413
Uncond. Play Potential	3.77161	1.14113	2.21856	2.95673	3.61000	4.40760	5.87413

UNCLE 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\MICHIGAN\6320.LIS (from 6320.PLA) 9-Jul-1997 10:40:43 Run No. 1

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Antrim Shale - Undeveloped Area, 6320	Michigan Basin	63	Dolton	10-24-94

Play Type Play Probability Success Ratio Scenario

Gas	1.000	0.800	1 scenario; 80 acres; Crovelli
Geologic Variables			
F100	F95	F75	F50
0.00000	(0.00000)	(0.00000)	(0.00000)
Oil EUR* (10^6 BBL)	0.00000	0.06000	0.11000
NA Gas EUR* (10^9 CF)	0.00000	(0.00000)	(0.00000)
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)
Gas Cells Depth (10^3 Ft)	0.15000	(0.60000)	(1.16250)
Number of Untested Cells	25000	(11667)	(20833)
			30000
			(75597)
			(151592)
			212388

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
-	-	10.00000

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
-	-	10.00000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL
	# Cells			Oil NA Gas AD Gas Gas/HC	NA Gas AD Gas Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000 0.8000 0.0000 0.8000	0.0000 0.0000 0.0000 0.0000
Gas Cell Depth	1.42447	0.45976	Cond. Play Prob.	0.0000 1.0000 0.0000 1.0000	0.0000 0.0000 0.0000 0.0000
			Uncond. Play Prob.	0.0000 1.0000 0.0000 1.0000	0.0000 0.0000 0.0000 0.0000
			Prob. Exceed Cutoff	0.0000 1.0000	
			Play Potential Cutoffs	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000

UNCONVENTIONAL RESOURCES for Antrim Shale - Undeveloped Area, 6320 C:\UNCONV\FEDCONTI\MICHIGAN\6320.LIS Crovelli & Balay

OIL (10^6 BBL)		Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod.	Untested Cells	0.00000	0.00000	0	0	0	0	0
Est.	Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10^9 CF)

NONASSOCIATED GAS (10^9 CF)		Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod.	Untested Cells	43980.7	38254.6	.....	.....	.....	.....	.....
Est.	Ultimate Recovery	0.03170	0.02785	.....	.....	.....	.....	.....
Cond.	Play Potential	1394.19	1212.69	306.029	634.043	1051.93	1745.24	3615.86
Uncond.	Play Potential	1394.19	1212.69	306.029	634.043	1051.93	1745.24	3615.86

ASSOCIATED-DISSOLVED GAS
(10^9 CF)

ASSOCIATED-DISSOLVED GAS (10^9 CF)		Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod.	Untested Cells	0.00000	0.00000	0	0	0	0	0
Est.	Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10^9 CF)

TOTAL GAS (10^9 CF)		Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod.	Untested Cells	43980.7	38254.6	.....	.....	.....	.....	.....
Est.	Ultimate Recovery	0.03170	0.02785	.....	.....	.....	.....	.....
Cond.	Play Potential	1394.19	1212.69	306.029	634.043	1051.93	1745.24	3615.86
Uncond.	Play Potential	1394.19	1212.69	306.029	634.043	1051.93	1745.24	3615.86

LIQUIDS in NONASSOC. GAS
(10^6 BBL)

LIQUIDS in NONASSOC. GAS (10^6 BBL)		Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod.	Untested Cells	0.00000	0.00000	0	0	0	0	0
Est.	Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

INPUT SUMMARY

Play Name		Province Name	
New Albany Shale Gas, 6407		Illinois Basin	

Play Type Play Probability Success Ratio Scenario

Gas	1.000	0.500	1 scenario; 160 acres; uniform
Geologic Variables			
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	F05
NA Gas EUR* (10^9 CF)	0.00000	0.02700	F25
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	F0
Gas Cells Depth (10^3 Ft)	0.50000	(1.33333)	Cutoff
Number of Untested Cells	800	(3793)	
		(15764)	
		(30728)	
		(45691)	
		(57662)	
		60655	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
0.000000	1.00000	5.0000000

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G E O L O G I C V A R I A B L E S and P R O B A B I L I T I E S O F O C C U R R E N C E

Cond. # Cells	Mean	Std. Dev.	Resource	Resource	Resource	Resource	NGL
# Cells	30727.1	17278.4	Oil	NA Gas	AD Gas	Gas/HC	AD Gas
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.5000	0.0000	Total
Gas Cell Depth	2.96333	1.05352	Cond. Play Prob.	0.0000	1.0000	1.0000	0.5000
			Uncond. Play Prob.	0.0000	1.0000	1.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000	1.0000	1.0000
Play Potential Cutoffs		0.0000	0.0000	0.0000	0.0000	0.0000	

UNCONVENTIONAL RESOURCES for New Albany Shale Gas, 6407 C:\UNCONV\FEDCONTI\APPALACH\6407.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS

	Mean	Std. Dev.	F95	F75	F50	F25	F05
NONASSOCIATED GAS							
No. Prod. Untested Cells	15363.6	8639.68	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00615	0.00701	.....	.....	.....	.....	.....
Cond. Play Potential	94.4475	53.1196	34.7517	57.8015	82.3208	117.241	195.004
Uncond. Play Potential	94.4475	53.1196	34.7517	57.8015	82.3208	117.241	195.004

ASSOCIATED-DISSOLVED GAS

	Mean	Std. Dev.	F95	F75	F50	F25	F05
ASSOCIATED-DISSOLVED GAS							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS

	Mean	Std. Dev.	F95	F75	F50	F25	F05
TOTAL GAS							
No. Prod. Untested Cells	15363.6	8639.68	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00615	0.00701	.....	.....	.....	.....	.....
Cond. Play Potential	94.4475	53.1196	34.7517	57.8015	82.3208	117.241	195.004
Uncond. Play Potential	94.4475	53.1196	34.7517	57.8015	82.3208	117.241	195.004

LIQUIDS in NONASSOC. GAS

	Mean	Std. Dev.	F95	F75	F50	F25	F05
LIQUIDS in NONASSOC. GAS							
No. Prod. Untested Cells	15363.6	8639.68	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00001	0.00001	.....	.....	.....	.....	.....
Cond. Play Potential	0.09445	0.05312	0.03475	0.05780	0.08232	0.11724	0.19500
Uncond. Play Potential	0.09445	0.05312	0.03475	0.05780	0.08232	0.11724	0.19500

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INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Devonian Black Shale, 6604	Cincinnati Arch	66	Ryder	7-25-94

Play Type	Play Probability	Success Ratio	Scenario	
Gas	0.500	0.500	1 scenario; 160 acres; Crovelli	
Geologic Variables	F100	F95	F75	F50
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	(0.00000)
NA Gas EUR* (10^9 CF)	0.00000	0.02700	0.05300	0.08600
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	(0.00000)
Gas Cells Depth (10^3 Ft)	0.50000	(0.93333)	(1.36666)	1.80000
Number of Untested Cells	800	(15867)	(30933)	46000

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio	Estimated % of resource in subplay
CF/BBL	BBL/10^6 CF	
0.000000	0.1000	3.000000

G E O L O G I C V A R I A B L E S and P R O B A B I L I T I E S O F O C C U R R E N C E

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL	AD Gas	Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	Oil NA Gas	NA Gas	AD Gas	Total
Gas Cell Depth	1.78166	0.54869	Cond. Play Prob.	AD Gas	Gas/HC		
			Uncond. Play Prob.	Gas/HC			
			Prob. Exceed Cutoff				
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Devonian Black Shale,		6604	C:\UNCONV\FEDCONTI\APPALACH\6604.LIS	Crovelli & Balay			
	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NONASSOCIATED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	22523.1	9353.44	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00370	0.00410	.....	.....	.....	.....	.....
Cond. Play Potential	83.3128	34.6038	39.9159	58.7883	76.9400	100.696	148.306
Uncond. Play Potential	41.6564	48.3111	0.00000	0.00000	0.00000	76.9400	128.353
ASSOCIATED-DISSOLVED GAS (10 ⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL GAS (10 ⁹ CF)							
No. Prod. Untested Cells	22523.1	9353.44	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00370	0.00410	.....	.....	.....	.....	.....
Cond. Play Potential	83.3128	34.6038	39.9159	58.7883	76.9400	100.696	148.306
Uncond. Play Potential	41.6564	48.3111	0.00000	0.00000	0.00000	76.9400	128.353
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)							
No. Prod. Untested Cells	22523.1	9353.44	.....	.....	.....	.....	.....
Est. Ultimate Recovery	<.00001	<.00001	.....	.....	.....	.....	.....
Cond. Play Potential	0.00833	0.00346	0.00399	0.00588	0.00769	0.01007	0.01483
Uncond. Play Potential	0.00417	0.00483	0.00000	0.00000	0.00000	0.00769	0.01284

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INPUT SUMMARY

Play Name		Province Name		Assessment Date	
Clinton/Medina high potential,	6728	Appalachian basin	67	Ryder	7/25/94

Play Type	Play Probability	Success Ratio	Scenario				
Gas	1.000	0.900	1 scenario: 40 acres; uniform				
Geologic Variables	F100	F95	F75	F50	F25	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.00500	0.02600	0.07000	0.14000	0.33000	1.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	3.50000	(4.33333)	(5.37500)	6.00000	(6.50000)	(7.00000)	7.50000
Number of Untested Cells	95600	(108469)	(159944)	(224288)	(288632)	(340107)	352976

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio	Estimated % of resource in subplay
CF/BBL	BBL/10^6 CF	
-----	-----	3.000000
0.000000	0.5000	

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL	AD Gas	Total
	# Cells	224287.	74297.9	Oil	NA Gas	AD Gas	Gas/HC
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	-----	-----	-----	-----
Gas Cell Depth	5.86354	0.85508	Cond. Play Prob.	0.0000	0.9000	0.9000	0.9000
			Uncond. Play Prob.	0.0000	1.0000	1.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000	1.0000	1.0000
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Clinton/Medina high potential, 6728 C:\UNCONV\FEDCONTI\APPAL-SS\6728.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS

	201859.	66868.3	.....	.....	.....	.....	.....
No. Prod. Untested Cells	0.00365	0.00468	.....	.....	.....	.....	.....
Est. Ultimate Recovery	737.138	244.195	411.531	562.874	699.741	869.888	1189.79
Cond. Play Potential	737.138	244.195	411.531	562.874	699.741	869.888	1189.79
Uncond. Play Potential	737.138	244.195	411.531	562.874	699.741	869.888	1189.79

ASSOCIATED-DISSOLVED GAS

	0.00000	0.00000	0	0	0	0	0
No. Prod. Untested Cells	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS

	201859.	66868.3	.....	.....	.....	.....	.....
No. Prod. Untested Cells	0.00365	0.00468	.....	.....	.....	.....	.....
Est. Ultimate Recovery	737.138	244.195	411.531	562.874	699.741	869.888	1189.79
Cond. Play Potential	737.138	244.195	411.531	562.874	699.741	869.888	1189.79
Uncond. Play Potential	737.138	244.195	411.531	562.874	699.741	869.888	1189.79

LIQUIDS in NONASSOC. GAS

	201859.	66868.3	.....	.....	.....	.....	.....
No. Prod. Untested Cells	<.00001	<.00001	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.36857	0.12210	0.20577	0.28144	0.34987	0.43494	0.59490
Cond. Play Potential	0.36857	0.12210	0.20577	0.28144	0.34987	0.43494	0.59490
Uncond. Play Potential	0.36857	0.12210	0.20577	0.28144	0.34987	0.43494	0.59490

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INPUT SUMMARY

Play Name	Clinton/Medina medium potential, 6729	Province Name	Appalachian basin
		Province #	67
		Evaluator	Ryder
		Assessment Date	7/25/94

Play Type Play Probability Success Ratio Scenario

Gas	1.000	0.700	1 scenario: 40 acres; uniform					
Geologic Variables	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.00500	0.02400	0.05000	0.08000	0.15000	0.80000	0.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000	0.00000
Gas Cells Depth (10^3 Ft)	3.00000	(3.50000)	(4.00000)	4.50000	(5.00000)	(5.50000)	6.00000	6.00000
Number of Untested Cells	30060	(37948)	(69500)	(108940)	(148379)	(179931)	187819	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio
CF/BBL	BBL/10^6 CF
-----	-----
0.000000	0.1000

Estimated % of resource in subplay

3.000000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Oil	NA Gas	AD Gas	Gas/HC	NGL	AD Gas	Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.0000	0.7000	0.7000	0.7000	0.000	0.7000	0.7000
Gas Cell Depth	4.50000	0.65828	Cond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000	0.000	1.0000	1.0000
			Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000	0.000	1.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000						
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Clinton/Medina medium potential, 6729 C:\UNCONV\FEDCONT\APPAL-SS\6729.LIS

Crovelli & Balay

OIL (10 ⁶ BBL)	Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁻⁹ CF)

No. Prod. Untested Cells	76257.4	31879.1	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00226	0.00323	.....	.....	.....	.....	.....
Cond. Play Potential	172.208	71.9964	82.0990	121.200	158.882	208.279	307.475
Uncond. Play Potential	172.208	71.9964	82.0990	121.200	158.882	208.279	307.475

ASSOCIATED-DISSOLVED GAS
(10⁻⁹ CF)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁻⁹ CF)

No. Prod. Untested Cells	76257.4	31879.1	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00226	0.00323	.....	.....	.....	.....	.....
Cond. Play Potential	172.208	71.9964	82.0990	121.200	158.882	208.279	307.475
Uncond. Play Potential	172.208	71.9964	82.0990	121.200	158.882	208.279	307.475

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

No. Prod. Untested Cells	76257.4	31879.1	.....	.....	.....	.....	.....
Est. Ultimate Recovery	<.00001	<.00001	.....	.....	.....	.....	.....
Cond. Play Potential	0.01722	0.00720	0.00821	0.01212	0.01589	0.02083	0.03075
Uncond. Play Potential	0.01722	0.00720	0.00821	0.01212	0.01589	0.02083	0.03075

INPUT SUMMARY

Play Name		Province Name		Assessment Date	
Clinton/Medina medium-low potential,6730		Appalachian basin			
		67			
Ryder					7/25/94

Play Type Play Probability Success Ratio Scenario

Gas	0.500	0.300	1 scenario: 40 acres; uniform					
Geologic Variables	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.00200	0.01500	0.03200	0.05500	0.10000	0.50000	0.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000	0.00000
Gas Cells Depth (10^3 Ft)	4.50000	(5.00000)	(5.50000)	6.00000	(6.50000)	(7.00000)	7.50000	
Number of Untested Cells	38350	(46970)	(81450)	(124551)	(167652)	(202132)	210752	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
0.000000	0.00000	1.000000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL	AD Gas	Total
# Cells		124550.	49768.3	Oil NA Gas AD Gas Gas/HC	NA Gas	AD Gas	Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has Cond. Play Prob.	0.0000 0.3000 0.0000 0.3000	0.0000	0.0000	0.0000
Gas Cell Depth	6.00000	0.65828	Uncond. Play Prob.	1.0000 1.0000 0.5000 1.0000	0.0000	0.0000	0.0000
			Prob. Exceed Cutoff	0.0000 0.5000 0.0000 0.5000	0.0000	0.0000	0.0000
			Play Potential Cutoffs	0.0000 0.0000 0.0000 0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Clinton/Medina medium-low potential, 6730

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Crovelli & Balay

OIL (10 ⁶ BBL)		Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod.	Untested Cells	0.00000	0.00000	0	0	0	0	0
Est.	Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

No. Prod. Untested Cells		14931.4	.....	.....	.....	.....	.....	.....
Est.	Ultimate Recovery	0.00049	0.00068	.....	.....	.....	.....	.....
Cond.	Play Potential	18.3089	7.31757	9.02531	13.1134	17.0013	22.0419	32.0261
Uncond.	Play Potential	9.15446	10.5156	0.00000	0.00000	0.00000	17.0013	27.8578

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

No. Prod. Untested Cells		0.00000	0	0	0	0	0	0
Est.	Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁹ CF)

No. Prod. Untested Cells		14931.4	.....	.....	.....	.....	.....	.....
Est.	Ultimate Recovery	0.00049	0.00068	.....	.....	.....	.....	.....
Cond.	Play Potential	18.3089	7.31757	9.02531	13.1134	17.0013	22.0419	32.0261
Uncond.	Play Potential	9.15446	10.5156	0.00000	0.00000	0.00000	17.0013	27.8578

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

No. Prod. Untested Cells		0.00000	0	0	0	0	0	0
Est.	Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond.	Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

UNCLE 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\APPAL-SS\6733.LIS (from 6733.PLA) 9-Jul-1997 11:02:51 Run No. 1

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Upper Devonian high potential, 6733	Appalachian basin	67	Ryder	7/25/94

Play Type	Play Probability	Success Ratio	Scenario	
Gas	1.000	0.800	1. scenario: 40 acres; uniform	
Geologic Variables			F100	F95
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.00700	0.02700	0.05400
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	3.00000	(3.50000)	(4.00000)	4.50000
Number of Untested Cells	64800	(-73096)	(106280)	(147759)
				(189238)
				(222422)
				230718

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF	Estimated % of resource in subplay
0.000000	0.2000	5.000000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond. # Cells	Mean	Std. Dev.	Resource	Oil	NA Gas	AD Gas	Gas/HC	NGL	NA Gas	AD Gas	Total
# Cells	147758.	47896.1									
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.8000	0.0000	0.8000	0.8000	0.0000	0.0000	0.8000
Gas Cell Depth	4.55416	0.74494	Cond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000	0.0000	0.0000	1.0000
			Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000	0.0000	0.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000						
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Upper Devonian high potential, 6733 C:\UNCONV\FEDCONTI\APPAL-SS\6733.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells							
Est. Ultimate Recovery	0.00000	0.00000	0	0	0	0	0
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod. Untested Cells							
Est. Ultimate Recovery	0.00422	0.00511	.....	.....	.....	.....	.....
Cond. Play Potential	498.833	161.708	282.113	383.405	474.522	587.293	798.160
Uncond. Play Potential	498.833	161.708	282.113	383.405	474.522	587.293	798.160

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod. Untested Cells							
Est. Ultimate Recovery	0.00000	0.00000	0	0	0	0	0
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁻⁹ CF)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod. Untested Cells							
Est. Ultimate Recovery	0.00422	0.00511	.....	.....	.....	.....	.....
Cond. Play Potential	498.833	161.708	282.113	383.405	474.522	587.293	798.160
Uncond. Play Potential	498.833	161.708	282.113	383.405	474.522	587.293	798.160

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

	Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod. Untested Cells							
Est. Ultimate Recovery	<.00001	<.00001	.....	.....	.....	.....	.....
Cond. Play Potential	0.09977	0.03234	0.05642	0.07668	0.09490	0.11746	0.15963
Uncond. Play Potential	0.09977	0.03234	0.05642	0.07668	0.09490	0.11746	0.15963

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UNCLE 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\APPAL-SS\6734.LIS (from 6734.FLA) 9-Jul-1997 11:06:01 Run No. 1

INPUT SUMMARY

Play Name	Province Name		
Upper Devonian medium potential,	Appalachian basin		

Play Type	Play Probability	Success Ratio	Scenario
Gas	1.000	0.500	1 scenario: 40 acres; uniform

Geologic Variables	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.00500	0.02400	0.05000	0.09500	0.20000	0.70000	0.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000	0.00000
Gas Cells Depth (10^3 Ft)	4.00000	(4.50000)	(5.12500)	5.50000	(5.83333)	(6.16666)	6.50000	
Number of Untested Cells	25400	(31965)	(58223)	(91046)	(123869)	(150127)	156692	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio
CF/BBL	BBL/10^6 CF

0.000000	0.0000
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GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Oil	NA Gas	AD Gas	Gas/HC	NGL	AD Gas	Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has Cond. Play Prob.	0.0000	0.0000	0.5000	0.0000	0.5000	0.0000	0.0000	0.0000
Gas Cell Depth	5.43645	0.53309	Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000	1.0000	0.0000	0.0000	0.0000
			Prob. Exceed Cutoff	0.0000	1.0000						
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Upper Devonian medium potential, 6734 C:\UNCONV\FEDCONTI\APPAL-SS\6734.LIS

Crovelli & Balay

OIL (10 ⁶ BBL)		Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod.	Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

No. Prod. Untested Cells		45522.8	18950.9	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00412	0.00517	.....	.....	.....	.....	.....	.....
Cond. Play Potential	187.554	78.0855	89.6978	132.220	173.147	226.742	334.231	334.231
Uncond. Play Potential	187.554	78.0855	89.6978	132.220	173.147	226.742	334.231	334.231

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

No. Prod. Untested Cells		0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁹ CF)

No. Prod. Untested Cells		45522.8	18950.9	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00412	0.00517	.....	.....	.....	.....	.....	.....
Cond. Play Potential	187.554	78.0855	89.6978	132.220	173.147	226.742	334.231	334.231
Uncond. Play Potential	187.554	78.0855	89.6978	132.220	173.147	226.742	334.231	334.231

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

No. Prod. Untested Cells		0.00000	0	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

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INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Upper Devonian medium-low potential, 6735	Appalachian basin	67	Ryder	7/25/94

Play Type Play Probability Success Ratio Scenario

Gas	0.500	0.300	1 scenario: 40 acres; uniform
Geologic Variables	F100	F95	F75
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.00200	0.01300
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	4.00000	(4.50000)	(5.12500)
Number of Untested Cells	19100	(29536)	(71581)

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CF
0.000000	0.0000

Gas-Oil Ratio CF/BBL	Estimated % of resource in subplay
0.000000	5.000000

G E O L O G I C V A R I A B L E S and P R O B A B I L I T I E S O F O C C U R R E N C E

	Mean	Std. Dev.	Resource	Resource	Resource	NGL	AD Gas	Total
Cond. # Cells	124061.	60600.3	Oil	NA Gas	AD Gas	Gas/HC	NA Gas	
# Cells	62030.9	75392.5						
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has					
Gas Cell Depth	5.43645	0.53309	Cond. Play Prob.	0.0000	0.3000	0.0000	0.0000	
			Uncond. Play Prob.	0.0000	1.0000	0.0000	0.0000	0.0000
			Prob. Exceed Cutoff	0.0000	0.5000	0.0000	0.0000	0.0000
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Upper Devonian medium-low potential, 6735

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Crovelli & Balay

OIL (10 ⁶ BBL)		Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod.	Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

No. Prod. Untested Cells		37218.6	18180.8	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00253	0.00401	.....	.....	.....	.....	.....	.....
Cond. Play Potential	94.0699	45.9585	39.4857	61.8646	84.5220	115.477	180.925	180.925
Uncond. Play Potential	47.0350	57.1697	0.00000	0.00000	0.00000	84.5220	153.014	153.014

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

No. Prod. Untested Cells		0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁹ CF)

No. Prod. Untested Cells		37218.6	18180.8	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00253	0.00401	.....	.....	.....	.....	.....	.....
Cond. Play Potential	94.0699	45.9585	39.4857	61.8646	84.5220	115.477	180.925	180.925
Uncond. Play Potential	47.0350	57.1697	0.00000	0.00000	0.00000	84.5220	153.014	153.014

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

No. Prod. Untested Cells		0.00000	0	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

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UNCLE 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\APPALACH\6740-60.LIS (from 6740-60.PLA) 9-Jul-1997 11:15:51 Run No. 1

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Greater Big Sandy Devonian Shale, 6740	Appalachia Basin	67	Bob Milici	7/27/94

Play Type Play Probability Success Ratio Scenario

Gas	1.000	0.900	2 of 2 scenario: New drilling, 60 acres; 0.5 prob; Crovelli
Geologic Variables	F100	F95	F75
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.03300	0.08000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	2.00000	(2.50000)	3.50000
Number of Untested Cells	20300	(27633)	(34967)
			42300
			(55525)
			(77567)
			95200

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio	Estimated % of resource in subplay
CF/BBL	BBL/10^6 CF	3.000000

Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Oil	NA Gas	AD Gas	Gas/HC	NGL	NA Gas	AD Gas	Total
	# Cells	46972.7	16232.0									
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.9000	0.0000	0.9000			0.0000	0.0000	
Gas Cell Depth	3.55416	0.74494	Cond. Play Prob.	0.0000	1.0000	0.0000	1.0000			0.0000	0.0000	
			Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000			0.0000	0.0000	
			Prob. Exceed Cutoff	0.0000	1.0000							

UNCONVENTIONAL RESOURCES for Greater Big Sandy Devonian Shale, 6740 C:\UNCONV\FEDCONT\APPALACH\6740-60.LIS

Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

No. Prod. Untested Cells	42275.4	14609.0	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00774	0.00935	.....	.....	.....	.....	.....
Cond. Play Potential	327.053	113.035	177.883	246.443	309.112	387.718	537.152
Uncond. Play Potential	327.053	113.035	177.883	246.443	309.112	387.718	537.152

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁹ CF)

No. Prod. Untested Cells	42275.4	14609.0	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00774	0.00935	.....	.....	.....	.....	.....
Cond. Play Potential	327.053	113.035	177.883	246.443	309.112	387.718	537.152
Uncond. Play Potential	327.053	113.035	177.883	246.443	309.112	387.718	537.152

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

INPUT SUMMARY

Play Name		Province Name	
Greater Big Sandy Devonian Shale,	6740	Appalachia Basin	

PLAY TYPE

Play	Probability	Success Ratio	Scenario
Gas	1.000	0.900	1 of 2 scenario: Old drilling, 150 acres; 0.5 prob; Crovelli

Geologic Variables	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.09000	0.25000	0.50000	0.82000	1.40000	2.00000	0.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000	0.00000
Gas Cells Depth (10^3 Ft)	2.00000	(2.50000)	(3.00000)	3.50000	(4.00000)	(4.83333)	5.50000	
Number of Untested Cells	46000	(6833)	(9067)	11300	(16400)	(24900)	31700	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio
CF/BBL	BBU/10^6 CF

0.000000

Estimated % of resource in subplay

3.000000

G E O L O G I C V A R I A B L E S and P R O B A B I L I T I E S O F O C C U R R E N C E

Cond.	# Cells	Mean	Std. Dev.	Resource	Resource	Resource	NGL
	# Cells	13428.7	5940.37	Oil	NA Gas	AD Gas	NA Gas
Oil Cell Depth	0.00000	0.00000	0.74494	Prob. Untested Cell has Cond. Play Prob.	0.0000	0.0000	0.9000
Gas Cell Depth	3.55416	3.55416	0.74494	Uncond. Play Prob.	0.0000	1.0000	0.0000
				Prob. Exceed Cutoff	0.0000	1.0000	0.0000
				Play Potential Cutoffs	0.0000	0.0000	0.0000
							0.0000
							0.0000

UNCONVENTIONAL RESOURCES for Greater Big Sandy Devonian Shale, 6740 C:\UNCON\APPALACH\6740-150.LIS

Crovelli & Balay

	Mean	Std.	Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)								
No. Prod.	0.00000	0.00000	0	0	0	0	0	0
Untested Cells	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

No. Prod.	12085.8	5346.45	.....	.....	.....	.....	.....	.....
Untested Cells	0.01806	0.01306	.....	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.01806	96.5676	99.5678	150.080	199.607	265.478	400.160	400.160
Cond. Play Potential	218.270	96.5676	99.5678	150.080	199.607	265.478	400.160	400.160
Uncond. Play Potential	218.270	96.5676	99.5678	150.080	199.607	265.478	400.160	400.160

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

No. Prod.	0.00000	0.00000	0	0	0	0	0	0
Untested Cells	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁹ CF)

No. Prod.	12085.8	5346.45	.....	.....	.....	.....	.....	.....
Untested Cells	0.01806	0.01306	.....	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.01806	96.5676	99.5678	150.080	199.607	265.478	400.160	400.160
Cond. Play Potential	218.270	96.5676	99.5678	150.080	199.607	265.478	400.160	400.160
Uncond. Play Potential	218.270	96.5676	99.5678	150.080	199.607	265.478	400.160	400.160

LIQUIDS in NONASSOC. GAS
(10⁻⁶ BBL)

No. Prod.	0.00000	0	0	0	0	0	0	0
Untested Cells	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

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UNCLE 97.1 Crovelli & Balay C:\UNCONV\FEDCONT\APPALACH\6741.LIS (from 6741.PLA) 9-Jul-1997 11:38:30 Run No. 1

INPUT SUMMARY

Play Name	Province Name		Assessment Date
Devonian Shale and Siltstone, 6741	Appalachia Basin		7/27/94

Play Type	Play Probability	Success Ratio	Scenario					
Gas	1.000	0.850	1 scenario: 60 acres; Crovelli					
Geologic Variables	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.00300	0.01000	0.04000	0.12500	0.30000	0.55000	0.00000
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	0.00000	0.00000
Gas Cells Depth (10^3 Ft)	4.00000	(4.50000)	(5.12500)	5.50000	(5.83333)	(6.16666)	6.50000	6.50000
Number of Untested Cells	14600	(20533)	(26667)	32700	(41925)	(57300)	69600	

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio	Expected Liquids/Gas Ratio
CF/BBL	BBL/10^6 CF
0.000000	0.00000

Estimated % of resource in subplay
3.000000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL
	# Cells	35454.3	11836.6	Oil NA Gas AD Gas Gas/HC	AD Gas Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000 0.8500 0.0000 0.8500	0.0000 0.0000
Gas Cell Depth	5.43645	0.53309	Cond. Play Prob.	0.0000 1.0000 0.0000 1.0000	0.0000 0.0000
			Uncond. Play Prob.	0.0000 1.0000 0.0000 1.0000	0.0000 0.0000
			Prob. Exceed Cutoff	0.0000 1.0000	
			Play Potential Cutoffs	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000

UNCONVENTIONAL RESOURCES for Devonian Shale and Siltstone, 6741 C:\UNCN\FCDCONTI\APPALACH\6741.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10⁹ CF)

No. Prod. Untested Cells	30136.2	10061.3	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00276	0.00334	.....	.....	.....	.....	.....
Cond. Play Potential	83.1758	27.7754	46.2114	63.3568	78.8933	98.2396	134.689
Uncond. Play Potential	83.1758	27.7754	46.2114	63.3568	78.8933	98.2396	134.689

ASSOCIATED-DISSOLVED GAS
(10⁹ CF)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10⁹ CF)

No. Prod. Untested Cells	30136.2	10061.3	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00276	0.00334	.....	.....	.....	.....	.....
Cond. Play Potential	83.1758	27.7754	46.2114	63.3568	78.8933	98.2396	134.689
Uncond. Play Potential	83.1758	27.7754	46.2114	63.3568	78.8933	98.2396	134.689

LIQUIDS in NONASSOC. GAS
(10⁶ BBL)

No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

INPUT SUMMARY

Play Name	Province Name	Assessment Date
Lower Thermal Maturity Devonian, 6742	Appalachia Basin	67
Bob Milici		7/27/94

Play Type Play Probability Success Ratio Scenario

Gas	1.000	0.700	1 scenario: 150 acres; uniform
Geologic Variables	F100	F95	F75
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.02200	0.05500
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	0.50000	(1.33333)	2.16666
Number of Untested Cells	5500	(8900)	(22500)
			(39500)
			(56500)
			(70100)
			73500

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL

Expected Liquids/Gas Ratio	Estimated % of resource in subplay
BBL/10^6 CF	
0.000000	3.000000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource				NGL	AD Gas	Total
				Oil	NA Gas	AD Gas	Gas/HC			
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	0.0000	0.7000	0.0000	0.0000	0.0000	0.0000
Gas Cell Depth	3.00000	1.09713	Cond. Play Prob.	0.0000	1.0000	0.0000	1.0000	0.0000	0.0000	0.0000
			Uncond. Play Prob.	0.0000	1.0000	0.0000	1.0000	0.0000	0.0000	0.0000
			Prob. Exceed Cutoff	0.0000	1.0000					
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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UNCONVENTIONAL RESOURCES for Lower Thermal Maturity Devonian, 6742 C:\UNCONV\FEDCONTI\APPALACH\6742.LIS Crovelli & Balay

OIL (10^6 BBL)		Mean	Std. Dev.	F95	F75	F50	F25	F05
No. Prod.	Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

NONASSOCIATED GAS
(10^9 CF)

No. Prod. Untested Cells		27649.7	13741.2	...	...	...	...	...
Est. Ultimate Recovery	0.00375	0.00291	...	...	...	...	...	...
Cond. Play Potential	103.583	51.4804	42.8246	67.5650	92.7581	127.345	200.914	200.914
Uncond. Play Potential	103.583	51.4804	42.8246	67.5650	92.7581	127.345	200.914	200.914

ASSOCIATED-DISSOLVED GAS
(10^9 CF)

No. Prod. Untested Cells		0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

TOTAL GAS
(10^9 CF)

No. Prod. Untested Cells		27649.7	13741.2	...	...	...	...	...
Est. Ultimate Recovery	0.00375	0.00291	...	...	...	...	...	...
Cond. Play Potential	103.583	51.4804	42.8246	67.5650	92.7581	127.345	200.914	200.914
Uncond. Play Potential	103.583	51.4804	42.8246	67.5650	92.7581	127.345	200.914	200.914

LIQUIDS in NONASSOC. GAS
(10^6 BBL)

No. Prod. Untested Cells		0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

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APPENDIX C

**Scenario combination play estimates of technically recoverable petroleum resources
for continuous-type (unconventional) plays in sandstones, shales, and chalks on
Federal Lands of the conterminous United States.**

[The first page of a scenario combination printout consists of the two play scenarios from Appendix B to be combined along with their respective probabilities. The second page of the printout consists of the estimated petroleum resources for the play combination (mean, standard deviation, and fractiles).]

UNCLE-SC 97.1 Crovelli and Balay C:\UNCONV\FEDCONTI\WASH-ORE\503.SCL (from 503.SCC) 11-Jul-1997 14:25:50 Run No. 1

I N P U T S U M M A R Y

Project : Unconv

Scenario	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Columbia Basin, 503	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	3199.95	2448.66	831.799	1607.58	2541.27	4017.26	7764.00	10^9 CF
prob. = 0.3000 (503-160.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	3199.95	2448.66	831.799	1607.58	2541.27	4017.26	7764.00	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	31.9995	24.4866	8.31799	16.0758	25.4127	40.1726	77.6400	10^6 BBL
Columbia Basin, 503	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	5600.10	4284.68	1455.96	2813.66	4447.62	7030.45	13586.4	10^9 CF
prob. = 0.7000 (503-80.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	5600.10	4284.68	1455.96	2813.66	4447.62	7030.45	13586.4	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	56.0010	42.8468	14.5596	28.1366	44.4762	70.3045	135.864	10^6 BBL
Columbia Basin, 503	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	4880.06	3982.40	1120.42	2304.30	3783.17	6171.33	12396.2	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	4880.06	3982.40	1120.42	2304.30	3783.17	6171.33	12396.2	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	48.8006	39.8240	11.2042	23.0430	37.8317	61.7133	123.962	10^6 BBL

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ESTIMATED RESOURCES for Columbia Basin, 503 C:\UNC\CONV\FED\CONTI\WASH-ORE\503.SCL

Crovelli and Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10^9 BBL)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10^12 CF)							
Uncond Combined Potential	4.880060	3.982401	1.120428	2.304301	3.783171	6.171339	12.39622
Associated-Dissolved Gas (10^12 CF)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10^12 CF)							
Uncond Combined Potential	4.880060	3.982401	1.120428	2.304301	3.783171	6.171339	12.39622
Nonassoc. Gas Liquids (10^9 BBL)							
Uncond Combined Potential	0.048801	0.039824	0.011204	0.023043	0.037832	0.061713	0.123962

UNCLE-SC 97.1 Crovelli and Balay C:\UNCONV\FEDCONTI\UINTA\2015.SCL (from 2015.SCC) 11-Jul-1997 14:24:12 Run No. 1

INPUT SUMMARY

Project : Unconv

Scenario	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Tertiary (Wasatch) - east (Uinta), 2015 prob. = 0.6000 (2015-160.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	1090.75	466.415	511.095	760.713	1002.90	1322.21	1967.97	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	1090.75	466.415	511.095	760.713	1002.90	1322.21	1967.97	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	8.07156	3.45147	3.78210	5.62927	7.42151	9.78436	14.5630	10^6 BBL
Tertiary (Wasatch) - east (Uinta), 2015 prob. = 0.4000 (2015-80.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	2646.33	967.244	1388.14	1957.42	2485.51	3156.05	4450.36	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	2646.33	967.244	1388.14	1957.42	2485.51	3156.05	4450.36	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	19.5828	7.15760	10.2722	14.4849	18.3927	23.3548	32.9326	10^6 BBL
Tertiary (Wasatch) - east, 2015	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	1712.98	1041.87	564.463	919.777	1414.69	2290.47	3763.41	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	1712.98	1041.87	564.463	919.777	1414.69	2290.47	3763.41	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	12.6760	7.70989	4.17703	6.80635	10.4687	16.9495	27.8493	10^6 BBL

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	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁹ BBL)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10 ¹² CF)							
Uncond Combined Potential	1.712983	1.041878	0.564464	0.919777	1.414694	2.290473	3.763419
Associated-Dissolved Gas (10 ¹² CF)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10 ¹² CF)							
Uncond Combined Potential	1.712983	1.041878	0.564464	0.919777	1.414694	2.290473	3.763419
Nonassoc. Gas Liquids (10 ⁹ BBL)							
Uncond Combined Potential	0.012676	0.007710	0.004177	0.006806	0.010469	0.016950	0.027849

UNCLE-SC 97.1 Crovelli and Balay C:\UNCONV\FEDCONTI\UINTA\2016.SCL (from 2016.SCC) 11-Jul-1997 14:24:35 Run No. 1

I N P U T S U M M A R Y

Project : Unconv

Scenario	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Tertiary (Wasatch) -w-est (Uinta), 2016 prob. = 0.6000 (2016-160.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	273.219	143.015	107.737	173.691	242.062	337.348	543.860	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	273.219	143.015	107.737	173.691	242.062	337.348	543.860	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	2.02182	1.05831	0.79726	1.28531	1.79126	2.49637	4.02456	10^6 BBL
Tertiary (Wasatch) -w-est (Uinta), 2016 prob. = 0.4000 (2016-80.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	554.820	288.051	220.452	354.178	492.411	684.594	1099.86	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	554.820	288.051	220.452	354.178	492.411	684.594	1099.86	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	4.10566	2.13157	1.63135	2.62092	3.64384	5.06599	8.13900	10^6 BBL
Tertiary (Wasatch) -w-est, 2016	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	385.859	253.954	120.880	210.606	318.090	488.613	882.321	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	385.859	253.954	120.880	210.606	318.090	488.613	882.321	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	2.85536	1.87926	0.89451	1.55848	2.35387	3.61574	6.52917	10^6 BBL

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	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10^9 BBL)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10^12 CF)							
Uncond Combined Potential	0.385860	0.253955	0.120880	0.210606	0.318091	0.488614	0.882321
Associated-Dissolved Gas (10^12 CF)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10^12 CF)							
Uncond Combined Potential	0.385860	0.253955	0.120880	0.210606	0.318091	0.488614	0.882321
Nonassoc. Gas Liquids (10^9 BBL)							
Uncond Combined Potential	0.002855	0.001879	0.000895	0.001558	0.002354	0.003616	0.006529

UNCLE-SC 97.1 Crovelli and Balay C:\UNCONV\FEDCONTI\SW-WYO\3740.SCL (from 3740.SCC) 11-Jul-1997 14:16:41 Run No. 1

I N P U T S U M M A R Y

Project : Unconv

Scenario	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Cloverly/Frontier, 3-740 prob. = 0.5000 (3740-160.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	18625.2	10014.1	7160.73	11677.4	16404.4	23044.9	37580.9	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	18625.2	10014.1	7160.73	11677.4	16404.4	23044.9	37580.9	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	279.379	150.212	107.410	175.162	246.067	345.674	563.714	10^6 BBL
Cloverly/Frontier, 3-740 prob. = 0.5000 (3740-80.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	37250.9	20026.0	14323.2	23356.6	32810.1	46089.8	75157.8	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	37250.9	20026.0	14323.2	23356.6	32810.1	46089.8	75157.8	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	558.763	300.390	214.849	350.350	492.152	691.347	1127.36	10^6 BBL
Cloverly/Frontier, 3-740	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	27938.0	18368.2	8426.72	15150.0	23200.8	35542.4	63754.6	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	27938.0	18368.2	8426.72	15150.0	23200.8	35542.4	63754.6	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	419.071	275.523	126.400	227.250	348.012	533.136	956.320	10^6 BBL

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ESTIMATED RESOURCES		for Cloverly/Frontier, 3740		C:\UNCONV\FEDCONTI\SW-WYO\3740.SCL		Crovelli and Baley
Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10^9 BBL)						
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10^12 CF)						
Uncond Combined Potential	27.93810	18.36822	8.426721	15.15005	23.20082	35.54244
Associated-Dissolved Gas (10^12 CF)						
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10^12 CF)						
Uncond Combined Potential	27.93810	18.36822	8.426721	15.15005	23.20082	35.54244
Nonassoc. Gas Liquids (10^9 BBL)						
Uncond Combined Potential	0.419071	0.275523	0.126401	0.227251	0.348012	0.533137

UNCLE-SC 97.1 Crovelli and Balay C:\UNCONV\FEDCONTI\SW-WYO\3741.SCL (from 3741.SCC) 11-Jul-1997

14:19:01 Run No. 1

INPUT SUMMARY Project : Unconv

Scenario	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Mesaverde, 3741	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	24242.9	7217.09	14386.8	19089.0	23235.1	28281.8	37525.6	10^9 CF
prob. = 0.3000 (3741-160.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	24242.9	7217.09	14386.8	19089.0	23235.1	28281.8	37525.6	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	363.644	108.256	215.802	286.336	348.527	424.227	562.884	10^6 BBL
Mesaverde, 3741	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	48704.8	14448.3	28958.6	38387.0	46693.5	56797.6	75289.8	10^9 CF
prob. = 0.7000 (3741-80.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	48704.8	14448.3	28958.6	38387.0	46693.5	56797.6	75289.8	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	730.572	216.725	434.379	575.805	700.403	851.964	1129.34	10^6 BBL
Mesaverde, 3741	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	41366.2	16953.3	17464.9	28050.0	4074.9	52041.4	71888.8	10^9 CF
AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
Gas	1.00000	0.00000	41366.2	16953.3	17464.9	28050.0	4074.9	52041.4	71888.8	10^9 CF	
NA-Gas-Liq	1.00000	0.00000	620.493	254.299	261.974	420.750	601.123	780.621	1078.33	10^6 BBL	

E S T I M A T E D R E S O U R C E S for Mesaverde, 3741 C: \UNCONV\FEDCONTI\SW-WYO\3741.SCL

Crovelli and Ballay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁹ BBL)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10 ¹² CF)							
Uncond Combined Potential	41.36626	16.95333	17.46496	28.05003	40.07493	52.04144	71.88885
Associated-Dissolved Gas (10 ¹² CF)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10 ¹² CF)							
Uncond Combined Potential	41.36626	16.95333	17.46496	28.05003	40.07493	52.04144	71.88885
Nonassoc. Gas Liquids (10 ⁹ BBL)							
Uncond Combined Potential	0.620494	0.254300	0.261974	0.420751	0.601124	0.780522	1.078333

UNCLE-SC 97.1 Crovelli and Balay C:\UNCONV\FEDCONT1\SW-WYO\3742.SCL (From 3742.SCC) 11-Jul-1997 14:21:00 Run No. 1

INPUT SUMMARY

Project : Unconv

Scenario	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Lewis, 3742	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	9482.08	2785.12	5667.85	7493.18	9097.74	11045.9	14603.2	10^9 CF
prob. = 0.5000 (3742-160.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	9482.08	2785.12	5667.85	7493.18	9097.74	11045.9	14603.2	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	142.231	41.7768	85.0178	112.397	136.466	165.688	219.048	10^6 BBL
Lewis, 3742	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	19022.1	5573.90	11384.9	15041.7	18254.6	22153.7	29269.5	10^9 CF
prob. = 0.5000 (3742-80.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	19022.1	5573.90	11384.9	15041.7	18254.6	22153.7	29269.5	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	285.332	83.6086	170.773	225.626	273.819	332.306	439.043	10^6 BBL
Lewis, 3742	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	14252.1	6493.54	6281.00	9049.74	12900.1	18372.9	26530.0	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	14252.1	6493.54	6281.00	9049.74	12900.1	18372.9	26530.0	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	213.782	97.4031	94.2150	135.746	193.502	275.594	397.951	10^6 BBL

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E S T I M A T E D R E S O U R C E S f o r L e w i s , 3 7 4 2 C : \ U N C O N V \ F E D C O N T I \ S W - W Y O \ 3 7 4 2 . S C L

Crovelli and Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10^9 BBL)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10^12 CF)							
Uncond Combined Potential	14.25214	6.493543	6.281006	9.049743	12.90016	18.37295	26.53009
Associated-Dissolved Gas (10^12 CF)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10^12 CF)							
Uncond Combined Potential	14.25214	6.493543	6.281006	9.049743	12.90016	18.37295	26.53009
Nonassoc. Gas Liquids (10^9 BBL)							
Uncond Combined Potential	0.213782	0.097403	0.094215	0.135746	0.193502	0.275594	0.397951

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UNCLE-SC 97.1 Crovelli and Balay C:\UNCONV\FEDCONTI\SW-WYO\3743.SCL (from 3743.SCC) 11-Jul-1997 14:22:35 Run No. 1

I N P U T S U M M A R Y

Project : Unconv

Scenario	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Lance/Fox Hills, 374-3	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
prob. = 0.3000 (3743-160.agg)	NA-Gas	1.00000	0.00000	4811.02	2485.95	1920.03	3078.55	4274.14	5934.04	9514.57	10^9 CF
prob. = 0.7000 (3743-80.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	4811.02	2485.95	1920.03	3078.55	4274.14	5934.04	9514.57	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	48.1102	24.8595	19.2003	30.7855	42.7414	59.3404	95.1457	10^6 BBL
Lance/Fox Hills, 374-3	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	9622.29	4971.34	3840.65	6157.70	8548.76	11868.2	19028.3	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	9622.29	4971.34	3840.65	6157.70	8548.76	11868.2	19028.3	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	96.2229	49.7134	38.4065	61.5770	85.4876	118.682	190.283	10^6 BBL
Lance/Fox Hills, 374-3	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	8178.91	4900.52	2567.84	4698.44	7089.01	10424.4	17605.4	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	8178.91	4900.52	2567.84	4698.44	7089.01	10424.4	17605.4	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	81.7891	49.0052	25.6784	46.9844	70.8901	104.244	176.054	10^6 BBL

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E S T I M A T E D R E S O U R C E S for Lance/Fox Hills, 3743 C:\UNCONV\FEDCONTI\SW-WYO\3743.SCL

Crovelli and Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁹ BBL)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10 ¹² CF)							
Uncond Combined Potential	8.178914	4.900525	2.567847	4.698447	7.089017	10.42442	17.60547
Associated-Dissolved Gas (10 ¹² CF)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10 ¹² CF)							
Uncond Combined Potential	8.178914	4.900525	2.567847	4.698447	7.089017	10.42442	17.60547
Nonassoc. Gas Liquids (10 ⁹ BBL)							
Uncond Combined Potential	0.081789	0.049005	0.025678	0.046984	0.070890	0.104244	0.176055

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UNCLE-SC 97.1		Crovelli and Balay		C:\UNCONV\FEDCONT\SW-WYO\3744.SCL		(from 3744.SCC)		11-Jul-1997		14:23:09		Run No. 1	
IN PUT SUMMARY		Project : Unconv											
Scenario	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05		Units	
Fort Union, 3744	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL	
	NA-Gas	1.00000	0.00000	427.057	213.710	175.478	277.635	381.906	525.336	831.171	10^9 CF		
prob. = 0.3000 (3744-160.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF	
	Gas	1.00000	0.00000	427.057	213.710	175.478	277.635	381.906	525.336	831.171	10^9 CF		
	NA-Gas-Liq	1.00000	0.00000	4.27057	2.13710	1.75478	2.77635	3.81906	5.25336	8.31171	10^6 BBL		
Fort Union, 3744	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL	
	NA-Gas	1.00000	0.00000	854.295	426.931	351.459	555.756	764.182	1050.77	1661.57	10^9 CF		
prob. = 0.7000 (3744-80.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF	
	Gas	1.00000	0.00000	854.295	426.931	351.459	555.756	764.182	1050.77	1661.57	10^9 CF		
	NA-Gas-Liq	1.00000	0.00000	8.54295	4.26931	3.51459	5.55756	7.64182	10.5077	16.6157	10^6 BBL		
Fort Union, 3744	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL	
	NA-Gas	1.00000	0.00000	726.123	423.819	233.580	423.105	634.397	925.332	1540.05	10^9 CF		
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF	
	Gas	1.00000	0.00000	726.123	423.819	233.580	423.105	634.397	925.332	1540.05	10^9 CF		
	NA-Gas-Liq	1.00000	0.00000	7.26123	4.23819	2.33580	4.23105	6.34397	9.25332	15.4005	10^6 BBL		

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ESTIMATED RESOURCES for Fort Union, 3744 C:\UNCONV\FEDCONTI\SW-WYO\3744.SCL Crovelli and Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10^9 BBL)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10^12 CF)							
Uncond Combined Potential	0.726124	0.423819	0.233581	0.423105	0.634397	0.925333	1.540052
Associated-Dissolved Gas (10^12 CF)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10^12 CF)							
Uncond Combined Potential	0.726124	0.423819	0.233581	0.423105	0.634397	0.925333	1.540052
Nonassoc. Gas Liquids (10^9 BBL)							
Uncond Combined Potential	0.007261	0.004238	0.002336	0.004231	0.006344	0.009253	0.015401

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UNCLE-SC 97.1 Crovelli and Bayay Project : Unconv

INPUT SUMMARY C:\UNCONV\FEDCONTI\APPALACH\6740.SCL (from 6740.SCC) 11-Jul-1997 14:25:09 Run No. 1

Scenario	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Greater Big Sandy Devonian Shale, 6740 prob. = 0.5000 (6740-150.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	218.270	96.5676	99.5677	150.080	199.607	265.478	400.159	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	218.270	96.5676	99.5677	150.080	199.607	265.478	400.159	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Greater Big Sandy Devonian Shale, 6740 prob. = 0.5000 (6740-60.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	327.053	113.034	177.883	246.442	309.112	387.717	537.152	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	327.053	113.034	177.883	246.442	309.112	387.717	537.152	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Greater Big Sandy Devonian, 6740	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	272.661	118.361	114.491	185.958	254.793	338.902	495.127	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	272.661	118.361	114.491	185.958	254.793	338.902	495.127	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL

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	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁹ BBL)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10 ¹² CF)							
Uncond Combined Potential	0.272662	0.118362	0.114492	0.185958	0.254794	0.338902	0.495127
Associated-Dissolved Gas (10 ¹² CF)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10 ¹² CF)							
Uncond Combined Potential	0.272662	0.118362	0.114492	0.185958	0.254794	0.338902	0.495127
Nonassoc. Gas Liquids (10 ⁹ BBL)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

APPENDIX D

Geographic aggregations – megaplay estimates of technically recoverable petroleum resources for continuous-type (unconventional) plays in sandstones, shales, and chalks on Federal Lands of the conterminous United States.

[The first page of an aggregation printout consists of the components to be aggregated (play estimates). The second page of the printout consists of the estimated petroleum resources for the aggregation (mean, standard deviation, and fractiles). Components are in the numerical order, as far as possible, of the plays from which they were derived.]

UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MMSVDP.AGL

Project : Continuous-Type Accumulations Dependency = 0.8700

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Piceance Mesaverde W-	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
illiams Fork, 2007	NA-Gas	1.00000	0.00000	2678.56	475.577	1973.79	2341.82	2637.31	2970.08	3523.89	10^9 CF
(..\pieceance\2007.ag-	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
g)	Gas	1.00000	0.00000	2678.56	475.577	1973.79	2341.82	2637.31	2970.08	3523.89	10^9 CF
NA-Gas-Liq	NA-Gas-Liq	1.00000	0.00000	13.3928	2.37788	9.86895	11.7091	13.1865	14.8504	17.6194	10^6 BBL
Piceance Mesaverde I-	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
les, 2010	NA-Gas	1.00000	0.00000	2655.61	510.176	1906.73	2293.66	2607.93	2965.25	3566.98	10^9 CF
(..\pieceance\2010.ag-	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
g)	Gas	1.00000	0.00000	2655.61	510.176	1906.73	2293.66	2607.93	2965.25	3566.98	10^9 CF
NA-Gas-Liq	NA-Gas-Liq	1.00000	0.00000	10.6224	2.04070	7.62693	9.17464	10.4317	11.8610	14.2679	10^6 BBL
MMSVDP											
Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
NA-Gas	1.00000	0.00000	5334.18	953.218	3931.08	4662.66	5250.95	5914.45	7020.88	10^9 CF	
AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
Gas	1.00000	0.00000	5334.18	953.218	3931.08	4662.66	5250.95	5914.45	7020.88	10^9 CF	
NA-Gas-Liq	NA-Gas-Liq	1.00000	0.00000	24.0152	4.27343	17.7214	21.0048	23.6436	26.6182	31.5755	10^6 BBL

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ESTIMATED RESOURCES for MMSVDP C:\UNCONV\FEDCONTI\AGG-GEOG\MMSVDP.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10^9 BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10^12 CF)							
Cond Aggregate Potential	5.334182	0.953219	3.931084	4.662661	5.250955	5.914455	7.020888
Uncond Aggregate Potential	5.334182	0.953219	3.931084	4.662661	5.250955	5.914455	7.020888
Associated-Dissolved Gas (10^12 CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10^12 CF)							
Cond Aggregate Potential	5.334182	0.953219	3.931084	4.662661	5.250955	5.914455	7.020888
Uncond Aggregate Potential	5.334182	0.953219	3.931084	4.662661	5.250955	5.914455	7.020888
Nonassoc. Gas Liquids (10^9 BBL)							
Cond Aggregate Potential	0.024015	0.004273	0.017721	0.021005	0.023644	0.026618	0.031576
Uncond Aggregate Potential	0.024015	0.004273	0.017721	0.021005	0.023644	0.026618	0.031576

UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MWASATCH.AGL

I N P U T S U M M A R Y

(from MWASATCH.AGC) 11-Jul-1997 14:38:22 Run No. 1

Project : Continuous-Type Accumulations

Dependency = 0.1700

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Tertiary (Wasatch) - east, 2015 (..\uinta\2015.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	1712.98	1041.87	564.463	919.777	1414.69	2290.47	3763.41	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	1712.98	1041.87	564.463	919.777	1414.69	2290.47	3763.41	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	12.6760	7.70989	4.117703	6.806335	10.4687	15.9495	27.8493	10^6 BBL
Tertiary (Wasatch) - west, 2016 (..\uinta\2016.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	385.859	253.954	120.880	210.606	318.090	488.613	882.321	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	385.859	253.954	120.880	210.606	318.090	488.613	882.321	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	2.855336	1.87926	0.89451	1.55848	2.35387	3.61574	6.52917	10^6 BBL
MWASATCH											
	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	2098.84	1113.53	818.963	1313.17	1845.85	2619.13	4215.57	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	2098.84	1113.53	818.963	1313.17	1845.85	2619.13	4215.57	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	15.5314	8.24016	6.06032	9.71751	13.6593	19.3816	31.1952	10^6 BBL

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E S T I M A T E D R E S O U R C E S f o r M W A S A T C H C:\UNCONV\FEDCONTI\AGG-GEOG\MWASATCH.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	2.098843	1.113536	0.818963	1.313178	1.845854	2.619140	4.215578
Uncond Aggregate Potential	2.098843	1.113536	0.818963	1.313178	1.845854	2.619140	4.215578
Associated-Dissolved Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	2.098843	1.113536	0.818963	1.313178	1.845854	2.619140	4.215578
Uncond Aggregate Potential	2.098843	1.113536	0.818963	1.313178	1.845854	2.619140	4.215578
Nonassoc. Gas Liquids (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.015531	0.008240	0.006060	0.009718	0.013659	0.019382	0.031195
Uncond Aggregate Potential	0.015531	0.008240	0.006060	0.009718	0.013659	0.019382	0.031195

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MMCSVDU.AGL

(from MMSVDU.GC)

11-Jul-1997

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Run No. 1

Project : Continuous-Type Accumulations

Dependency = 0.2000

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
<hr/>											
Basin Flank Mesaverde (Uinta), 2018 (..\uinta\2018.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	2270.57	928.776	1100.36	1611.83	2101.55	2740.06	4013.69	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	2270.57	928.776	1100.36	1611.83	2101.55	2740.06	4013.69	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	16.8022	6.87294	8.14273	11.9276	15.5515	20.2765	29.7013	10^6 BBL
<hr/>											
Deep synclinal Mesaverde (Uinta), 2020 (..\uinta\2020.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	11.4873	5.38186	4.99904	7.70267	10.4023	14.0482	21.6459	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	11.4873	5.38186	4.99904	7.70267	10.4023	14.0482	21.6459	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.08500	0.03982	0.03699	0.05699	0.07697	0.10395	0.16017	10^6 BBL
<hr/>											
MMCSVDU	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	2282.06	929.868	1109.12	1622.43	2113.35	2752.83	4026.88	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	2282.06	929.868	1109.12	1622.43	2113.35	2752.83	4026.88	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	16.8872	6.88102	8.20753	12.0060	15.6388	20.3709	29.7989	10^6 BBL

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E S T I M A T E D R E S O U R C E S for MMSYD U C:\UNCONV\FEDCONTI\AGG-GEOG\MMSYD U.AGL Crovelli & Ballay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	2.282066	0.929868	1.109127	1.622436	2.113358	2.752831	4.026884
Uncond Aggregate Potential	2.282066	0.929868	1.109127	1.622436	2.113358	2.752831	4.026884
Associated-Dissolved Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	2.282066	0.929868	1.109127	1.622436	2.113358	2.752831	4.026884
Uncond Aggregate Potential	2.282066	0.929868	1.109127	1.622436	2.113358	2.752831	4.026884
Nonassoc. Gas Liquids (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.016887	0.006881	0.008208	0.012006	0.015639	0.020371	0.029799
Uncond Aggregate Potential	0.016887	0.006881	0.008208	0.012006	0.015639	0.020371	0.029799

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MSNJNGAS.AGL

(from MSNJNGAS.AGC) 11-Jul-1997 11:05:47 Run No. 1

I N P U T S U M M A R Y		Project : Continuous-Type Accumulations				Dependency = 0.4093			
Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25
Central Basin Dakota-Gas, 2205	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	NA-Gas	1.00000	0.00000	3284.51	1468.85	1485.37	2248.03	2998.34	3999.06
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	6052.37
(..\san-juan\2205.ag-g)	Gas	1.00000	0.00000	3284.51	1468.85	1485.37	2248.03	2998.34	3999.06
	NA-Gas-Liq	1.00000	0.00000	0.13138	0.05875	0.05941	0.08992	0.11993	0.15996
Central Basin Mesaverde Gas, 2209	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	NA-Gas	1.00000	0.00000	3833.89	2243.29	1355.35	2294.85	3309.06	4771.49
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	8079.01
(..\san-juan\2209.ag-g)	Gas	1.00000	0.00000	3833.89	2243.29	1355.35	2294.85	3309.06	4771.49
	NA-Gas-Liq	1.00000	0.00000	0.19169	0.11216	0.06776	0.11474	0.16545	0.23857
Pictured Cliffs Gas, - 2211	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	NA-Gas	1.00000	0.00000	1305.61	497.080	666.158	952.024	1220.17	1563.85
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	2234.94
(..\san-juan\2211.ag-g)	Gas	1.00000	0.00000	1305.61	497.080	666.158	952.024	1220.17	1563.85
	NA-Gas-Liq	1.00000	0.00000	0.03916	0.01491	0.01998	0.02856	0.03660	0.04691
MSNJNGAS	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	NA-Gas	1.00000	0.00000	8424.02	3412.45	4251.85	6075.27	7815.22	10087.5
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	14656.3
	Gas	1.00000	0.00000	8424.02	3412.45	4251.85	6075.27	7815.22	10087.5
	NA-Gas-Liq	1.00000	0.00000	0.36224	0.15406	0.17528	0.25574	0.33363	0.43648

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ESTIMATED RESOURCES for MSNNGAS C:\UNCONV\FEDCONTI\AGG-GEOG\MSNNGAS.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10^9 BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10^12 CF)							
Cond Aggregate Potential	8.424026	3.412453	4.251856	6.075272	7.815222	10.08751	14.65634
Uncond Aggregate Potential	8.424026	3.412453	4.251856	6.075272	7.815222	10.08751	14.65634
Associated-Dissolved Gas (10^12 CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10^12 CF)							
Cond Aggregate Potential	8.424026	3.412453	4.251856	6.075272	7.815222	10.08751	14.65634
Uncond Aggregate Potential	8.424026	3.412453	4.251856	6.075272	7.815222	10.08751	14.65634
Nonassoc. Gas Liquids (10^9 BBL)							
Cond Aggregate Potential	0.000362	0.000154	0.000175	0.000256	0.000334	0.000436	0.000646
Uncond Aggregate Potential	0.000362	0.000154	0.000175	0.000256	0.000334	0.000436	0.000646

UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MBIOGAS.AGL (from MBIOGAS.AGC) 11-Jul-1997

I N P U T S U M M A R Y Project : Continuous-Type Accumulations Dependency = 0.1664

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Biogenic Gas - High -	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Potential, 2810	NA-Gas	1.00000	0.00000	1087.34	537.193	451.940	711.297	974.867	1336.10	2102.85	10^9 CF
(..\plains\2810.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	1087.34	537.193	451.940	711.297	974.867	1336.10	2102.85	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Biogenic Gas - Medium Potential, 2811	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
(..\plains\2811.agg)	NA-Gas	1.00000	0.00000	4095.94	2560.14	1350.42	2357.85	3473.28	5116.39	8933.30	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	4095.94	2560.14	1350.42	2357.85	3473.28	5116.39	8933.30	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Biogenic Gas - Low Potential, 2812	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
(..\plains\2812.agg)	NA-Gas	1.00000	0.00000	2303.03	1677.70	636.396	1198.75	1861.48	2890.59	5444.89	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	2303.03	1677.70	636.396	1198.75	1861.48	2890.59	5444.89	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Southern Margin Niob-rara-shallow, 3113	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
(..\plains\3113.agg)	NA-Gas	0.75000	0.00000	37.8864	32.9394	0.00000	0.00000	35.1163	55.2116	96.7624	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	0.75000	0.00000	37.8864	32.9394	0.00000	0.00000	35.1163	55.2116	96.7624	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
MBIOGAS	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	7524.21	3449.37	3423.45	5145.77	6852.90	9140.49	13895.2	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	7524.21	3449.37	3423.45	5145.77	6852.90	9140.49	13895.2	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL

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ESTIMATED RESOURCES for MBIOGAS C:\UNCONV\FEDCONTI\AGG-GEOG\MBIOGAS.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10^9 BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10^12 CF)							
Cond Aggregate Potential	7.524219	3.449371	3.423458	5.145771	6.852903	9.140498	13.89530
Uncond Aggregate Potential	7.524219	3.449371	3.423458	5.145771	6.852903	9.140498	13.89530
Associated-Dissolved Gas (10^12 CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10^12 CF)							
Cond Aggregate Potential	7.524219	3.449371	3.423458	5.145771	6.852903	9.140498	13.89530
Uncond Aggregate Potential	7.524219	3.449371	3.423458	5.145771	6.852903	9.140498	13.89530
Nonassoc. Gas Liquids (10^9 BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MBKKNW.AGL 11:31:47 Run No. 1

		Project : Continuous-Type Accumulations					Dependancy = 0.2446				
Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Fairway Bakken, 3110	Oil	1.00000	0.00000	29.0857	10.0284	15.8443	21.9347	27.4982	34.4730	47.7238	10^6 BBL
	NA-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(\unconv\fedcont\ba-	AD-Gas	1.00000	0.00000	26.1781	9.02559	14.2599	19.7412	24.7484	31.0257	42.9514	10^9 CF
kken\3110.agg)	Gas	1.00000	0.00000	26.1781	9.02559	14.2599	19.7412	24.7484	31.0257	42.9514	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Intermediate Bakken, -	Oil	1.00000	0.00000	7.02962	2.20648	4.05070	5.45421	6.70698	8.24750	11.1051	10^6 BBL
	NA-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(\unconv\fedcont\ba-	AD-Gas	1.00000	0.00000	5.62369	1.76518	3.24056	4.36336	5.36558	6.59800	8.88410	10^9 CF
kken\3111.agg)	Gas	1.00000	0.00000	5.62369	1.76518	3.24056	4.36336	5.36558	6.59800	8.88410	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Outlying Bakken, 311-	Oil	0.70000	0.00000	0.40789	0.30795	0.00000	0.00000	0.46708	0.62216	0.87244	10^6 BBL
2	NA-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(\unconv\fedcont\ba-	AD-Gas	0.70000	0.00000	0.32631	0.24636	0.00000	0.00000	0.37366	0.49773	0.69795	10^9 CF
kken\3112.agg)	Gas	0.70000	0.00000	0.32631	0.24636	0.00000	0.00000	0.37366	0.49773	0.69795	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
MBKKNW	Oil	1.00000	0.00000	36.5243	10.8720	21.7357	28.7488	35.0407	42.5945	56.4199	10^6 BBL
	NA-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(\unconv\fedcont\ba-	AD-Gas	1.00000	0.00000	32.1281	9.68154	18.9832	25.2030	30.7891	37.5202	49.8755	10^9 CF
kken\3112.agg)	Gas	1.00000	0.00000	32.1281	9.68154	18.9832	25.2030	30.7891	37.5202	49.8755	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL

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ESTIMATED RESOURCES for MBKKNW C:\UNCONV\FEDCONTI\AGG-GEOG\MBKKNW.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10^9 BBL)							
Cond Aggregate Potential	0.036524	0.010872	0.021736	0.028749	0.035041	0.042595	0.056420
Uncond Aggregate Potential	0.036524	0.010872	0.021736	0.028749	0.035041	0.042595	0.056420
Nonassociated Gas (10^12 CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Associated-Dissolved Gas (10^12 CF)							
Cond Aggregate Potential	0.032128	0.009682	0.018983	0.025203	0.030789	0.037520	0.049876
Uncond Aggregate Potential	0.032128	0.009682	0.018983	0.025203	0.030789	0.037520	0.049876
Total Gas (10^12 CF)							
Cond Aggregate Potential	0.032128	0.009682	0.018983	0.025203	0.030789	0.037520	0.049876
Uncond Aggregate Potential	0.032128	0.009682	0.018983	0.025203	0.030789	0.037520	0.049876
Nonassoc. Gas Liquids (10^9 BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

Project : Continuous-Type Accumulations

Dependency = 0.6000

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Cloverly/Frontier, 3-740	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	27938.0	18368.2	8426.72	15150.0	23200.8	35542.4	63754.6	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(.. \sw-wyo\3740.agg)	Gas	1.00000	0.00000	27938.0	18368.2	8426.72	15150.0	23200.8	35542.4	63754.6	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	419.071	275.523	126.400	227.250	348.012	533.136	956.320	10^6 BBL
Mesaverde, 3741	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	41366.2	16953.3	17464.9	28050.0	40074.9	52041.4	71888.8	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(.. \sw-wyo\3741.agg)	Gas	1.00000	0.00000	41366.2	16953.3	17464.9	28050.0	40074.9	52041.4	71888.8	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	620.493	254.299	261.974	420.750	601.123	780.621	1078.33	10^6 BBL
Lewis, 3742	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	14252.1	6493.54	6281.00	9049.74	12900.1	18372.9	26530.0	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(.. \sw-wyo\3742.agg)	Gas	1.00000	0.00000	14252.1	6493.54	6281.00	9049.74	12900.1	18372.9	26530.0	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	213.782	97.4031	94.2150	135.746	193.502	275.594	397.951	10^6 BBL
Lance/Fox Hills, 374-3	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	8178.91	4900.52	2567.84	4698.44	7089.01	10424.4	17605.4	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(.. \sw-wyo\3743.agg)	Gas	1.00000	0.00000	8178.91	4900.52	2567.84	4698.44	7089.01	10424.4	17605.4	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	81.7891	49.0052	25.6784	46.9844	70.88901	104.244	176.054	10^6 BBL
Fort Union, 3744	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	726.123	423.819	233.580	423.105	634.397	925.332	1540.05	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(.. \sw-wyo\3744.agg)	Gas	1.00000	0.00000	726.123	423.819	233.580	423.105	634.397	925.332	1540.05	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	7.26123	4.23819	2.33580	4.23105	6.34397	9.25332	15.4005	10^6 BBL
MGRNRVR	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	92461.5	40121.6	43471.9	63898.3	85914.1	113319.	165069.	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	92461.5	40121.6	43471.9	63898.3	85914.1	113319.	165069.	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	1342.39	582.081	628.980	926.394	1247.51	1646.58	2398.41	10^6 BBL

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E S T I M A T E D R E S O U R C E S for MGRNRVR C:\UNCONV\FEDCONTI\AGG-GEOG\MGRNRVR.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	-	F25	-	F05
Oil (10^9 BBL)									
Cond Aggregate Potential									
Uncond Aggregate Potential	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nonassociated Gas (10^12 CF)									
Cond Aggregate Potential	92.46153	40.12160	43.47196	63.89837	85.91412	113.3194	165.0693		
Uncond Aggregate Potential	92.46153	40.12160	43.47196	63.89837	85.91412	113.3194	165.0693		
Associated-Dissolved Gas (10^12 CF)									
Cond Aggregate Potential	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Uncond Aggregate Potential	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Total Gas (10^12 CF)									
Cond Aggregate Potential	92.46153	40.12160	43.47196	63.89837	85.91412	113.3194	165.0693		
Uncond Aggregate Potential	92.46153	40.12160	43.47196	63.89837	85.91412	113.3194	165.0693		
Nonassoc. Gas Liquids (10^9 BBL)									
Cond Aggregate Potential	1.342398	0.582081	0.628980	0.926394	1.247511	1.646581	2.398416		
Uncond Aggregate Potential	1.342398	0.582081	0.628980	0.926394	1.247511	1.646581	2.398416		

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ESTIMATED RESOURCES for MNTOCODL C:\UNCONV\FEDCONT\AGG-GEOG\MNTOCODL.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁹ BBL)							
Cond Aggregate Potential	0.001332	0.000381	0.000807	0.001060	0.001281	0.001547	0.002032
Uncond Aggregate Potential	0.001332	0.000381	0.000807	0.001060	0.001281	0.001547	0.002032
Nonassociated Gas (10 ¹² CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Associated-Dissolved Gas (10 ¹² CF)							
Cond Aggregate Potential	0.002664	0.000762	0.001615	0.002120	0.002562	0.003095	0.004063
Uncond Aggregate Potential	0.002664	0.000762	0.001615	0.002120	0.002562	0.003095	0.004063
Total Gas (10 ¹² CF)							
Cond Aggregate Potential	0.002664	0.000762	0.001615	0.002120	0.002562	0.003095	0.004063
Uncond Aggregate Potential	0.002664	0.000762	0.001615	0.002120	0.002562	0.003095	0.004063
Nonassoc. Gas Liquids (10 ⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MAUSTIN.AGL (from MAUSTIN.AGC) 10-Jul-1997 16:27:58 Run No. 1
 I N P U T S U M M A R Y Project : Continuous-Type Accumulations Dependency = 0.3765
 Component Resource U.P.P. Cutoff Mean S.D. F95 F75 F50 F25 F05 Units

 Austin Mid-dip Oil -- Oil 1.00000 0.00000 13.7632 3.40955 8.94200 11.3317 13.3594 15.7498 19.9590 10^6 BBL
 Area 3, 4749 NA-Gas 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 10^9 CF
 AD-Gas 1.00000 0.00000 33.0317 8.18292 21.4608 27.1962 32.0625 37.7996 47.9017 10^9 CF
 Gas 1.00000 0.00000 33.0317 8.18292 21.4608 27.1962 32.0625 37.7996 47.9017 10^9 CF
 (..\gulf\4749.agg) NA-Gas-Liq 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 10^6 BBL

 MAUSTIN Oil 1.00000 0.00000 13.7632 3.40955 8.94200 11.3317 13.3594 15.7498 19.9590 10^6 BBL
 NA-Gas 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 10^9 CF
 AD-Gas 1.00000 0.00000 33.0317 8.18292 21.4608 27.1962 32.0625 37.7996 47.9017 10^9 CF
 Gas 1.00000 0.00000 33.0317 8.18292 21.4608 27.1962 32.0625 37.7996 47.9017 10^9 CF
 NA-Gas-Liq 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 10^6 BBL

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E S T I M A T E D R E S O U R C E S for MAUSTIN C:\UNCONV\FEDCONTI\AGG-GEOG\MAUSTIN.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁹ BBL)							
Cond Aggregate Potential	0.013763	0.003410	0.008942	0.011332	0.013359	0.015750	0.019959
Uncond Aggregate Potential	0.013763	0.003410	0.008942	0.011332	0.013359	0.015750	0.019959
Nonassociated Gas (10 ¹² CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Associated-Dissolved Gas (10 ¹² CF)							
Cond Aggregate Potential	0.033032	0.008183	0.021461	0.027196	0.032063	0.037800	0.047902
Uncond Aggregate Potential	0.033032	0.008183	0.021461	0.027196	0.032063	0.037800	0.047902
Total Gas (10 ¹² CF)							
Cond Aggregate Potential	0.033032	0.008183	0.021461	0.027196	0.032063	0.037800	0.047902
Uncond Aggregate Potential	0.033032	0.008183	0.021461	0.027196	0.032063	0.037800	0.047902
Nonassoc. Gas Liquids (10 ⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MBLKSHM.AGL (from MBLKSHM.AGC) 10-Jul-1997

I N P U T S U M M A R Y Project : Continuous-Type Accumulations Dependency = 0.1300

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Antrim Shale - Undeveloped Area, 6320 (..\michigan\6320.ag- g)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^-6 BBL
	NA-Gas	1.00000	0.00000	1394.18	1212.68	306.029	634.043	1051.93	1745.24	3615.85	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	1394.18	1212.68	306.029	634.043	1051.93	1745.24	3615.85	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^-6 BBL

MBLKSHM	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^-6 BBL
	NA-Gas	1.00000	0.00000	1394.18	1212.68	306.029	634.043	1051.93	1745.24	3615.85	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	1394.18	1212.68	306.029	634.043	1051.93	1745.24	3615.85	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^-6 BBL

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E S T I M A T E D R E S O U R C E S for MBLKSHM C:\UNCONV\FEDCONTI\AGG-GEOG\MBLKSHM.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Uncond Aggregate Potential	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Nonassociated Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	1.394187	1.212686	0.306029	0.634043	1.051931	1.745241	3.615858
Uncond Aggregate Potential	1.394187	1.212686	0.306029	0.634043	1.051931	1.745241	3.615858
Associated-Dissolved Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Uncond Aggregate Potential	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Total Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	1.394187	1.212686	0.306029	0.634043	1.051931	1.745241	3.615858
Uncond Aggregate Potential	1.394187	1.212686	0.306029	0.634043	1.051931	1.745241	3.615858
Nonassoc. Gas Liquids (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Uncond Aggregate Potential	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MUPDEVSS.AGL

Project : Continuous-Type Accumulations

(from MUPDEVSS.AGC) 11-Jul-1997 11:26:34 Run No. 1

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Upper Devonian high - potential, 6733 (.. \appal-ss\6733.ag- g)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	498.832	161.708	282.112	383.405	474.522	587.293	798.159	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	498.832	161.708	282.112	383.405	474.522	587.293	798.159	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.09976	0.03234	0.05642	0.07668	0.09490	0.11745	0.15963	10^6 BBL
Upper Devonian medium potential, 6734 (.. \appal-ss\6734.ag- g)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	187.553	78.0854	89.6977	132.219	173.146	226.742	334.231	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	187.553	78.0854	89.6977	132.219	173.146	226.742	334.231	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Upper Devonian medium-low potential, 6735 (.. \appal-ss\6735.ag- g)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	0.50000	0.00000	47.0349	57.1697	0.00000	0.00000	0.00000	84.5220	153.014	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	0.50000	0.00000	47.0349	57.1697	0.00000	0.00000	0.00000	84.5220	153.014	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
MUPDEVSS	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	733.421	217.590	446.880	580.245	696.268	855.045	1123.61	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	733.421	217.590	446.880	580.245	696.268	855.045	1123.61	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.09976	0.03234	0.05642	0.07668	0.09490	0.11745	0.15963	10^6 BBL

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ESTIMATED RESOURCES for MUPDEVSS C:\UNCONV\FEDCONTI\AGG-GEOG\MUPDEVSS.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10^9 BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10^12 CF)							
Cond Aggregate Potential	0.733421	0.217590	0.446880	0.580245	0.696269	0.855045	1.123614
Uncond Aggregate Potential	0.733421	0.217590	0.446880	0.580245	0.696269	0.855045	1.123614
Associated Dissolved Gas (10^12 CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10^12 CF)							
Cond Aggregate Potential	0.733421	0.217590	0.446880	0.580245	0.696269	0.855045	1.123614
Uncond Aggregate Potential	0.733421	0.217590	0.446880	0.580245	0.696269	0.855045	1.123614
Nonassoc. Gas Liquids (10^9 BBL)							
Cond Aggregate Potential	0.000100	0.000032	0.000056	0.000077	0.000095	0.000117	0.000160
Uncond Aggregate Potential	0.000100	0.000032	0.000056	0.000077	0.000095	0.000117	0.000160

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MBLKSHI.AGL (from MBLKSHI.AGC) 11-Jul-1997 11:16:45 Run No. 1

I N P U T S U M M A R Y

Project : Continuous-Type Accumulations Dependency = 0.5300

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
New Albany Shale Gas- , 6407	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
(..\appalach\6407.ag- g)	NA-Gas	1.00000	0.00000	94.4475	53.1195	34.7517	57.8015	82.3208	117.241	195.003	10^9 CF
AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
Gas	1.00000	0.00000	94.4475	53.1195	34.7517	57.8015	82.3208	117.241	195.003	195.003	10^9 CF
NA-Gas-Liq	1.00000	0.00000	0.09444	0.05311	0.03475	0.05780	0.08232	0.11724	0.19500	0.19500	10^6 BBL
Devonian Black Shale- , 6604	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
(..\appalach\6604.ag- g)	NA-Gas	0.50000	0.00000	41.6563	48.3111	0.00000	0.00000	0.00000	76.9400	128.352	10^9 CF
AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
Gas	0.50000	0.00000	41.6563	48.3111	0.00000	0.00000	0.00000	76.9400	128.352	128.352	10^9 CF
NA-Gas-Liq	0.50000	0.00000	0.00416	0.004833	0.00000	0.00000	0.00000	0.00769	0.01283	0.01283	10^6 BBL
MBLKSHI	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
NA-Gas	1.00000	0.00000	136.103	88.7462	43.4586	71.1384	100.208	181.948	299.216	299.216	10^9 CF
AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
Gas	1.00000	0.00000	136.103	88.7462	43.4586	71.1384	100.208	181.948	299.216	299.216	10^9 CF
NA-Gas-Liq	1.00000	0.00000	0.09861	0.05583	0.03613	0.05960	0.08439	0.12358	0.20395	0.20395	10^6 BBL

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E S T I M A T E D R E S S O U R C E S for MBLKSHI C:\UNCONV\FEDCONTI\AGG-GEOG\MBLKSHI.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	0.136104	0.088746	0.043459	0.071138	0.100208	0.181948	0.299217
Uncond Aggregate Potential	0.136104	0.088746	0.043459	0.071138	0.100208	0.181948	0.299217
Associated-Dissolved Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	0.136104	0.088746	0.043459	0.071138	0.100208	0.181948	0.299217
Uncond Aggregate Potential	0.136104	0.088746	0.043459	0.071138	0.100208	0.181948	0.299217
Nonassoc. Gas Liquids (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.000099	0.000056	0.000036	0.000060	0.000084	0.000124	0.000204
Uncond Aggregate Potential	0.000099	0.000056	0.000036	0.000060	0.000084	0.000124	0.000204

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MCLINTON.AGL (from MCLINTON.AGC) 11-Jul-1997 11:01:13 Run No. 1

I N P U T S U M M A R Y Project : Continuous-Type Accumulations Dependency = 0.2196

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Clinton/Medina high - potential, 6728	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	737.137	244.195	411.531	562.874	699.741	869.888	1189.79	10^9 CF
(..\appal-ss\6728.ag- g)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	737.137	244.195	411.531	562.874	699.741	869.888	1189.79	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.36856	0.12209	0.20576	0.28143	0.34987	0.43494	0.59489	10^6 BBL
Clinton/Medina medium potential, 6729	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	172.208	71.9963	82.0990	121.200	158.881	208.278	307.475	10^9 CF
(..\appal-ss\6729.ag- g)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	172.208	71.9963	82.0990	121.200	158.881	208.278	307.475	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.01722	0.00719	0.00820	0.01212	0.01588	0.02082	0.03074	10^6 BBL
Clinton/Medina medium low potential, 6730	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	0.50000	0.00000	9.15446	10.5155	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(..\appal-ss\6730.ag- g)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	0.50000	0.00000	9.15446	10.5155	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
MCLINTON	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	918.500	272.226	549.738	725.047	879.265	1070.46	1415.91	10^9 CF
(..\appal-ss\6730.ag- g)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	918.500	272.226	549.738	725.047	879.265	1070.46	1415.91	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.38578	0.12387	0.21948	0.29738	0.36731	0.45369	0.61488	10^6 BBL

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ESTIMATED RESOURCES for MCCLINTON C:\UNCONV\FEDCONTI\AGG-GEOG\MCLINTON.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10 ¹² CF)							
Cond Aggregate Potential	0.918500	0.272227	0.549738	0.725047	0.879266	1.070462	1.415913
Uncond Aggregate Potential	0.918500	0.272227	0.549738	0.725047	0.879266	1.070462	1.415913
Associated-Dissolved Gas (10 ¹² CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10 ¹² CF)							
Cond Aggregate Potential	0.918500	0.272227	0.549738	0.725047	0.879266	1.070462	1.415913
Uncond Aggregate Potential	0.918500	0.272227	0.549738	0.725047	0.879266	1.070462	1.415913
Nonassoc. Gas Liquids (10 ⁹ BBL)							
Cond Aggregate Potential	0.000386	0.000124	0.000219	0.000297	0.000367	0.000454	0.000615
Uncond Aggregate Potential	0.000386	0.000124	0.000219	0.000297	0.000367	0.000454	0.000615

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MBLKSHA.AGL

(from MBLKSHA.AGC)

11-Jul-1997 14:39:27 Run No. 1

I N P U T S U M M A R Y

Project : Continuous-Type Accumulations Dependency = 0.3258

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Greater Big Sandy Devonian, 6740	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
NA-Gas		1.00000	0.00000	272.661	118.361	114.491	185.958	254.793	338.902	495.127	10^9 CF
AD-Gas		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(..\appalach\6740.ag-g)	Gas	1.00000	0.00000	272.661	118.361	114.491	185.958	254.793	338.902	495.127	10^9 CF
NA-Gas-Liq		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Devonian Shale and Siltstone, 6741	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
NA-Gas		1.00000	0.00000	83.1758	27.7753	46.2113	63.3568	78.8932	98.2395	134.688	10^9 CF
AD-Gas		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(..\appalach\6741.ag-g)	Gas	1.00000	0.00000	83.1758	27.7753	46.2113	63.3568	78.8932	98.2395	134.688	10^9 CF
NA-Gas-Liq		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Lower Thermal Maturity Devonian, 6742	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
NA-Gas		1.00000	0.00000	103.582	51.4803	42.8246	67.5649	92.7580	127.345	200.914	10^9 CF
AD-Gas		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(..\appalach\6742.ag-g)	Gas	1.00000	0.00000	103.582	51.4803	42.8246	67.5649	92.7580	127.345	200.914	10^9 CF
NA-Gas-Liq		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
MBLKSHA	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
NA-Gas		1.00000	0.00000	459.420	156.446	253.601	349.417	436.627	543.895	743.819	10^9 CF
AD-Gas		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
Gas		1.00000	0.00000	459.420	156.446	253.601	349.417	436.627	543.895	743.819	10^9 CF
NA-Gas-Liq		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL

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ESTIMATED RESOURCES for MBLKSHA C:\UNCONV\FEDCONTI\AGG-GEOG\MBLKSHA.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	0.459420	0.156447	0.253601	0.349418	0.436628	0.543896	0.743820
Uncond Aggregate Potential	0.459420	0.156447	0.253601	0.349418	0.436628	0.543896	0.743820
Associated-Dissolved Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	0.459420	0.156447	0.253601	0.349418	0.436628	0.543896	0.743820
Uncond Aggregate Potential	0.459420	0.156447	0.253601	0.349418	0.436628	0.543896	0.743820
Nonassoc. Gas Liquids (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

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APPENDIX E

Geographic aggregations – province estimates of technically recoverable petroleum resources for continuous-type (unconventional) plays in sandstones, shales, and chalks on Federal Lands of the conterminous United States.

[The first page of an aggregation printout consists of the components to be aggregated (megaplay estimates). The second page of the printout consists of the estimated petroleum resources for the aggregation (mean, standard deviation, and fractiles). Components are in the numerical order, as far as possible, of the plays from which they were derived.]

UNCLE-SC 97.1 Crovelli and Balay

I N P U T S U M M A R Y

C:\UNCONV\FEDCONTI\WASH-ORE\503.SCL

(from 503.SCC)

11-Jul-1997

14:43:59

Run No. 1

Project : Unconv

Scenario	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Columbia Basin, 503	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	3199.95	2448.66	831.799	1607.58	2541.27	4017.26	7764.00	10^9 CF
prob. = 0.3000 (503-160.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	3199.95	2448.66	831.799	1607.58	2541.27	4017.26	7764.00	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	31.9995	24.4866	8.31799	16.0758	25.4127	40.1726	77.6400	10^6 BBL
Columbia Basin, 503	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	5600.10	4284.68	1455.96	2813.66	4447.62	7030.45	13586.4	10^9 CF
prob. = 0.7000 (503-80.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	5600.10	4284.68	1455.96	2813.66	4447.62	7030.45	13586.4	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	56.0010	42.8468	14.5596	28.1366	44.4762	70.3045	135.864	10^6 BBL
Columbia Basin, 503	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	4880.06	3982.40	1120.42	2304.30	3783.17	6171.33	12396.2	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	4880.06	3982.40	1120.42	2304.30	3783.17	6171.33	12396.2	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	48.8006	39.8240	11.2042	23.0430	37.8317	61.7133	123.962	10^6 BBL

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ESTIMATED RESOURCES for Columbia Basin, S03 C:\UNCONV\FEDCONTI\WASH-ORE\503.SCL

crovelli and Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10^9 BBL)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10^12 CF)							
Uncond Combined Potential	4.880060	3.982401	1.120428	2.304301	3.783171	6.171339	12.39622
Associated-Dissolved Gas (10^12 CF)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10^12 CF)							
Uncond Combined Potential	4.880060	3.982401	1.120428	2.304301	3.783171	6.171339	12.39622
Nonassoc. Gas Liquids (10^9 BBL)							
Uncond Combined Potential	0.048801	0.039824	0.011204	0.023043	0.037832	0.061713	0.123962

UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\PPINCE.AGL

Project : Continuous-Type Accumulations Dependency = 0.0000

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
MISVDP											
Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
NA-Gas	1.00000	0.00000	5334.18	953.218	3931.08	4662.66	5250.95	5914.45	7020.88	10^9 CF	
AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(mmsvdp.agg)	Gas	1.00000	0.00000	5334.18	953.218	3931.08	4662.66	5250.95	5914.45	7020.88	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	24.0152	4.27343	17.7214	21.0048	23.6436	26.6182	31.5755	10^6 BBL
Crustaceous Self-sour-											
ced Fractured, 2009	Oil	1.00000	0.00000	32.8325	8.63654	20.7484	26.6689	31.7523	37.8047	48.5922	10^6 BBL
NA-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
AD-Gas	1.00000	0.00000	9.84976	2.59096	6.22453	8.00069	9.52571	11.3414	14.5776	10^9 CF	
(..\pieceance\2009.ag-	Gas	1.00000	0.00000	9.84976	2.59096	6.22453	8.00069	9.52571	11.3414	14.5776	10^9 CF
g)	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
PPINCE											
Oil	1.00000	0.00000	32.8325	8.63654	20.7484	26.6689	31.7523	37.8047	48.5922	10^6 BBL	
NA-Gas	1.00000	0.00000	5334.18	953.218	3931.08	4662.66	5250.99	5914.45	7020.88	10^9 CF	
AD-Gas	1.00000	0.00000	9.84976	2.59096	6.22453	8.00069	9.52571	11.3414	14.5776	10^9 CF	
Gas	1.00000	0.00000	5344.03	953.222	3937.30	4670.66	5260.99	5925.79	7035.46	10^9 CF	
NA-Gas-Liq	1.00000	0.00000	24.0152	4.27343	17.7214	21.0048	23.6438	26.6182	31.5755	10^6 BBL	

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E S T I M A T E D R E S O U R C E S for P P I N C E C:\UNCONV\FEDCONTI\AGG-GEOG\PPINCE.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.032833	0.008637	0.020748	0.026669	0.031752	0.037805	0.048592
Uncond Aggregate Potential	0.032833	0.008637	0.020748	0.026669	0.031752	0.037805	0.048592
Nonassociated Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	5.334182	0.953219	3.931084	4.662661	5.250999	5.914455	7.020888
Uncond Aggregate Potential	5.334182	0.953219	3.931084	4.662661	5.250999	5.914455	7.020888
Associated-Dissolved Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	0.009850	0.002591	0.006225	0.008001	0.009526	0.011341	0.014578
Uncond Aggregate Potential	0.009850	0.002591	0.006225	0.008001	0.009526	0.011341	0.014578
Total Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	5.344032	0.953222	3.937308	4.670661	5.260995	5.925796	7.035466
Uncond Aggregate Potential	5.344032	0.953222	3.937308	4.670661	5.260995	5.925796	7.035466
Nonassoc. Gas Liquids (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.024015	0.004273	0.017721	0.021005	0.023644	0.026618	0.031576
Uncond Aggregate Potential	0.024015	0.004273	0.017721	0.021005	0.023644	0.026618	0.031576

UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\PUINTA.AGL

IN P U T S U M M A R Y Project : Continuous-Type Accumulations

Dependency = 0.5300

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
MWASATCH	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^-6 BBL
	NA-Gas	1.00000	0.00000	2098.84	1113.53	818.963	1313.17	1845.85	2619.13	4215.57	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(mwasatch.agg)	Gas	1.00000	0.00000	2098.84	1113.53	818.963	1313.17	1845.85	2619.13	4215.57	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	15.5314	8.24016	6.06032	9.71751	13.6593	19.3816	31.1952	10^-6 BBL
MMSVDU	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^-6 BBL
	NA-Gas	1.00000	0.00000	2282.06	929.868	1109.12	1622.43	2113.35	2752.83	4026.88	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(mmsvd़u.agg)	Gas	1.00000	0.00000	2282.06	929.868	1109.12	1622.43	2113.35	2752.83	4026.88	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	16.88872	6.888102	8.20753	12.0060	15.6388	20.3709	29.7989	10^-6 BBL
PUINTA	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^-6 BBL
	NA-Gas	1.00000	0.00000	4380.90	1789.46	2171.67	3128.32	4053.02	5276.87	7691.40	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	4380.90	1789.46	2171.67	3128.32	4053.02	5276.87	7691.40	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	32.4187	13.2420	16.0703	23.1495	29.9923	39.0489	56.9164	10^-6 BBL

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E S T I M A T E D R E S O U R C E S for P U I N T A C:\UNCONV\FEDCONTI\AGG-GEOG\PUINTA.AGL Crovelli & Ballay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	4.380910	1.789465	2.171674	3.128321	4.053025	5.276880	7.691408
Uncond Aggregate Potential	4.380910	1.789465	2.171674	3.128321	4.053025	5.276880	7.691408
Associated-Dissolved Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	4.380910	1.789465	2.171674	3.128321	4.053025	5.276880	7.691408
Uncond Aggregate Potential	4.380910	1.789465	2.171674	3.128321	4.053025	5.276880	7.691408
Nonassoc. Gas Liquids (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.032419	0.013242	0.016070	0.023150	0.029992	0.039049	0.056916
Uncond Aggregate Potential	0.032419	0.013242	0.016070	0.023150	0.029992	0.039049	0.056916

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UNCLE-AG 97.1 Crovelli & Balay C:\UNICONV\FEDCONTI\AGG-GEOG\PUINPIC.AGL (from PUINPIC.AGC) 11-Jul-1997 14:49:57 Run No. 1

I N P U T S U M M A R Y Project : Continuous-Type Accumulations Dependency = 0.4300

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
PUINTA	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	4380.90	1789.46	2171.67	3128.32	4053.02	5276.87	7691.40	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	4380.90	1789.46	2171.67	3128.32	4053.02	5276.87	7691.40	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	32.4187	13.2420	16.0703	23.1495	29.9923	39.0489	56.9164	10^6 BBL
PPINCE	Oil	1.00000	0.00000	32.8325	8.63654	20.7484	26.6689	31.7523	37.8047	48.5922	10^6 BBL
	NA-Gas	1.00000	0.00000	5334.18	953.218	3931.08	4662.66	5250.99	5914.45	7020.88	10^9 CF
	AD-Gas	1.00000	0.00000	9.84976	2.59096	6.22453	8.00069	9.52571	11.3414	14.5776	10^9 CF
	Gas	1.00000	0.00000	5344.03	953.222	3937.30	4670.66	5260.99	5925.79	7035.46	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	24.0152	4.27343	17.7214	21.0048	23.6438	26.6182	31.5755	10^6 BBL
PUINPIC	Oil	1.00000	0.00000	32.8325	8.63654	20.7484	26.6689	31.7523	37.8047	48.5922	10^6 BBL
	NA-Gas	1.00000	0.00000	9715.09	2361.72	6483.89	8066.19	9421.54	11043.1	13939.6	10^9 CF
	AD-Gas	1.00000	0.00000	9.84976	2.59096	6.22453	8.00069	9.52571	11.3414	14.5776	10^9 CF
	Gas	1.00000	0.00000	9724.94	2361.73	6491.94	8075.26	9431.56	11053.7	13951.3	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	56.4340	15.5653	35.4737	45.4981	54.2956	65.0297	84.6268	10^6 BBL

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E S T I M A T E D R E S O U R C E S for PUINPIC C:\UNCONV\FEDCONTI\AGG-GEOG\PUINPIC.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁹ BBL)							
Cond Aggregate Potential	0.032833	0.008637	0.020748	0.026669	0.031752	0.037805	0.048592
Uncond Aggregate Potential	0.032833	0.008637	0.020748	0.026669	0.031752	0.037805	0.048592
Nonassociated Gas (10 ¹² CF)							
Cond Aggregate Potential	9.715092	2.361728	6.483890	8.066195	9.421541	11.04313	13.93961
Uncond Aggregate Potential	9.715092	2.361728	6.483890	8.066195	9.421541	11.04313	13.93961
Associated-Dissolved Gas (10 ¹² CF)							
Cond Aggregate Potential	0.009850	0.002591	0.006225	0.008001	0.009526	0.011341	0.014578
Uncond Aggregate Potential	0.009850	0.002591	0.006225	0.008001	0.009526	0.011341	0.014578
Total Gas (10 ¹² CF)							
Cond Aggregate Potential	9.724942	2.361731	6.491943	8.075268	9.431564	11.05373	13.95136
Uncond Aggregate Potential	9.724942	2.361731	6.491943	8.075268	9.431564	11.05373	13.95136
Nonassoc. Gas Liquids (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.056434	0.015565	0.035474	0.045498	0.054296	0.065030	0.084627
Uncond Aggregate Potential	0.056434	0.015565	0.035474	0.045498	0.054296	0.065030	0.084627

UNCLE 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\SAN-JUAN\2103.LIS (from 2103.PLA) 10-Jul-1997 16:54:37 Run No. 1

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Fractured Interbed, 2103	Paradox Basin	21	Huffman	9/1/94

Play Type Play Probability Success Ratio Scenario

Oil 1.000 0.200 1 scenario: 960 acres; Crovelli

Geologic Variables

	F100	F95	F75	F50	F25	F05	F0	Cutoff
Oil EUR* (10^6 BBL)	0.00000	0.03400	0.12500	0.30000	0.60000	1.10000	1.50000	0.00000
NA Gas EUR* (10^9 CF)	0.00000	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	0.00000
Oil Cells Depth (10^3 Ft)	8.00000	(8.33333)	(8.66666)	9.00000	(9.33333)	(9.66666)	10.00000	0.00000
Gas Cells Depth (10^3 Ft)	0.00000	(0.00000)	(0.00000)	0.00000	(0.00000)	(0.00000)	(0.00000)	0.00000
Number of Untested Cells	181	(721)	(1260)	1800	(3927)	(7472)	10308	-

* EUR = Estimated Ultimate Recovery

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Gas-Oil Ratio Expected Liquids/Gas Ratio

BBL/10^6 CF

Estimated % of resource in subplay

65.00000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	Resource	Resource	Resource	NGL
	# Cells	2902.92	2282.42	Oil	NA Gas	AD Gas	Gas/HC	NA Gas
Oil Cell Depth	9.00000	0.43885	Prob. Unrested Cell has	0.2000	0.0000	0.2000	0.2000	0.0000
Gas Cell Depth	0.00000	0.00000	Cond. Play Prob.	1.0000	0.0000	1.0000	0.0000	0.0000
			Uncond. Play Prob.	1.0000	0.0000	1.0000	0.0000	0.0000
			Prob. Exceed Cutoff	1.0000	0.0000	1.0000	0.0000	0.0000
			Play Potential Cutoffs	0.0000	0.0000	0.0000	0.0000	0.0000

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UNCONVENTIONAL RESOURCES for Fractured Interbed, 2103 C:\UNCONV\FEDCONTI\SAN-JUAN\2103.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	580.585	456.993	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.27129	0.23025	.....	.....	.....	.....	.....
Cond. Play Potential	157.509	124.103	39.4433	77.4237	123.720	197.700	388.066
Uncond. Play Potential	157.509	124.103	39.4433	77.4237	123.720	197.700	388.066
NONASSOCIATED GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
ASSOCIATED-DISSOLVED GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	580.585	456.993	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.21704	0.18420	.....	.....	.....	.....	.....
Cond. Play Potential	126.007	99.2828	31.5547	61.9389	98.9760	158.160	310.453
Uncond. Play Potential	126.007	99.2828	31.5547	61.9389	98.9760	158.160	310.453
TOTAL GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	580.585	456.993	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.21704	0.18420	.....	.....	.....	.....	.....
Cond. Play Potential	126.007	99.2828	31.5547	61.9389	98.9760	158.160	310.453
Uncond. Play Potential	126.007	99.2828	31.5547	61.9389	98.9760	158.160	310.453
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\PSANJUAN.AGL

I N P U T S U M M A R Y

Project : Continuous-Type Accumulations

Dependency = 0.2300

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
---	---	---	---	---	---	---	---	---	---	---	---
MSNJNGAS	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	8424.02	3412.45	4251.85	6075.27	7815.22	10087.5	14656.3	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(msnjngas.agg)	Gas	1.00000	0.00000	8424.02	3412.45	4251.85	6075.27	7815.22	10087.5	14656.3	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.36224	0.15406	0.17528	0.25574	0.333363	0.43648	0.64599	10^6 BBL
Mancos Fractured Sha-	Oil	1.00000	0.00000	75.5387	43.3182	27.2581	45.7336	65.5286	93.8914	157.531	10^6 BBL
le, 2208	NA-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	AD-Gas	1.00000	0.00000	37.7693	21.6591	13.6290	22.8668	32.7643	46.9457	78.7655	10^9 CF
(.. \san-juan\2208.ag-	Gas	1.00000	0.00000	37.7693	21.6591	13.6290	22.8668	32.7643	46.9457	78.7655	10^9 CF
g)	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
---	---	---	---	---	---	---	---	---	---	---	---
PSANJUAN	Oil	1.00000	0.00000	75.5387	43.3182	27.2581	45.7336	65.5286	93.8914	157.531	10^6 BBL
	NA-Gas	1.00000	0.00000	8424.02	3412.45	4251.85	6075.27	7809.46	10087.5	14656.3	10^9 CF
	AD-Gas	1.00000	0.00000	37.7693	21.6591	13.6290	22.8668	32.7643	46.9457	78.7655	10^9 CF
	Gas	1.00000	0.00000	8461.79	3417.49	4265.48	6098.13	7847.73	10134.4	14735.1	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.36224	0.15406	0.17528	0.25574	0.333341	0.43648	0.64599	10^6 BBL

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ESTIMATED RESOURCES for PSANTUAN C:\UNCONV\FEDCONTI\AGG-GEOG\PSANTUAN.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10^9 BBL)							
Cond Aggregate Potential	0.075539	0.043318	0.027258	0.045734	0.065529	0.093891	0.157531
Uncond Aggregate Potential	0.075539	0.043318	0.027258	0.045734	0.065529	0.093891	0.157531
Nonassociated Gas (10^12 CF)							
Cond Aggregate Potential	8.424026	3.412453	4.251856	6.075272	7.809464	10.08751	14.65634
Uncond Aggregate Potential	8.424026	3.412453	4.251856	6.075272	7.809464	10.08751	14.65634
Associated-Dissolved Gas (10^12 CF)							
Cond Aggregate Potential	0.037769	0.021659	0.013629	0.022867	0.032764	0.046946	0.078766
Uncond Aggregate Potential	0.037769	0.021659	0.013629	0.022867	0.032764	0.046946	0.078766
Total Gas (10^12 CF)							
Cond Aggregate Potential	8.461795	3.417499	4.265485	6.098139	7.847732	10.13446	14.73511
Uncond Aggregate Potential	8.461795	3.417499	4.265485	6.098139	7.847732	10.13446	14.73511
Nonassoc. Gas Liquids (10^9 BBL)							
Cond Aggregate Potential	0.000362	0.000154	0.000175	0.000256	0.000333	0.000436	0.000646
Uncond Aggregate Potential	0.000362	0.000154	0.000175	0.000256	0.000333	0.000436	0.000646

UNCLE-AG 97.1 Crowsell & Bayay I N P U T S U M M A R Y Project : C:\UNCONV\FEDCONTI\AGG-GEOG\PBKKN.AGL (from PBKKN.AGC) 11-Jul-1997

14:47:53 Run No. 1

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
MBKKNW	Oil	1.00000	0.00000	36.5243	10.8720	21.7357	28.7488	35.0407	42.5945	56.4199	10^6 BBL
	NA-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	AD-Gas	1.00000	0.00000	32.1281	9.68154	18.9832	25.2030	30.7891	37.5202	49.8755	10^9 CF
(mbkknw.agg)	Gas	1.00000	0.00000	32.1281	9.68154	18.9832	25.2030	30.7891	37.5202	49.8755	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Bakken Formation, Central Montana, 2804 (..\bakken\2804.agg)	Oil	0.25000	0.00000	1.61609	3.47637	0.00000	0.00000	0.00000	0.00000	0.00000	8.92143 10^6 BBL
	NA-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	AD-Gas	0.25000	0.00000	1.29287	2.78109	0.00000	0.00000	0.00000	0.00000	0.00000	7.13714 10^9 CF
	Gas	0.25000	0.00000	1.29287	2.78109	0.00000	0.00000	0.00000	0.00000	0.00000	7.13714 10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
PBKKN	Oil	1.00000	0.00000	38.1404	12.6697	22.2360	29.4931	35.9398	42.5945	61.6297	10^6 BBL
	NA-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	AD-Gas	1.00000	0.00000	33.4209	11.0908	19.4135	25.8178	31.5151	37.5202	53.9904	10^9 CF
	Gas	1.00000	0.00000	33.4209	11.0908	19.4135	25.8178	31.5151	37.5202	53.9904	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL

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E S T I M A T E D R E S O U R C E S for PBKKN C:\UNCONV\FEDCONTI\AGG-GEOG\PBKKN.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁹ BBL)							
Cond Aggregate Potential	0.038140	0.012670	0.022236	0.029493	0.035940	0.042595	0.061630
Uncond Aggregate Potential	0.038140	0.012670	0.022236	0.029493	0.035940	0.042595	0.061630
Nonassociated Gas (10 ¹² CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Associated-Dissolved Gas (10 ¹² CF)							
Cond Aggregate Potential	0.033421	0.011091	0.019414	0.025818	0.031515	0.037520	0.053990
Uncond Aggregate Potential	0.033421	0.011091	0.019414	0.025818	0.031515	0.037520	0.053990
Total Gas (10 ¹² CF)							
Cond Aggregate Potential	0.033421	0.011091	0.019414	0.025818	0.031515	0.037520	0.053990
Uncond Aggregate Potential	0.033421	0.011091	0.019414	0.025818	0.031515	0.037520	0.053990
Nonassoc. Gas Liquids (10 ⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

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UNCLE-AG 97.1 Crowell & Bayay

I N P U T S U M M A R Y

Project : Continuous-Type Accumulations

(from MBIOGAS.AGL)

Dependency = 0.1664

11-Jul-1997

10:52:32

Run No. 1

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Biogenic Gas - High - Potential, 2810 (..\plains\2810.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	1087.34	537.193	451.940	711.297	974.867	1336.10	2102.85	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	1087.34	537.193	451.940	711.297	974.867	1336.10	2102.85	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Biogenic Gas - Medium Potential, 2811 (..\plains\2811.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	4095.94	2560.14	1350.42	2357.85	3473.28	5116.39	8933.30	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	4095.94	2560.14	1350.42	2357.85	3473.28	5116.39	8933.30	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Biogenic Gas - Low Potential, 2812 (..\plains\2812.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	2303.03	1677.70	636.396	1198.75	1861.48	2890.59	5444.89	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	2303.03	1677.70	636.396	1198.75	1861.48	2890.59	5444.89	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Southern Margin Niob-rara-shallow, 3113 (..\plains\3113.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	0.75000	0.00000	37.8864	32.9394	0.00000	0.00000	35.1163	55.2116	96.7624	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	0.75000	0.00000	37.8864	32.9394	0.00000	0.00000	35.1163	55.2116	96.7624	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
MBIOGAS	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	7524.21	3449.37	3423.45	5145.77	6852.90	9140.49	13895.2	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	7524.21	3449.37	3423.45	5145.77	6852.90	9140.49	13895.2	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL

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ESTIMATED RESOURCES for MBIOGAS C:\UNCONV\FEDCONTI\AGG-GEOG\MBIOGAS.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10^9 BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10^12 CF)							
Cond Aggregate Potential	7.524219	3.449371	3.423458	5.145771	6.852903	9.140498	13.89530
Uncond Aggregate Potential	7.524219	3.449371	3.423458	5.145771	6.852903	9.140498	13.89530
Associated-Dissolved Gas (10^12 CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10^12 CF)							
Cond Aggregate Potential	7.524219	3.449371	3.423458	5.145771	6.852903	9.140498	13.89530
Uncond Aggregate Potential	7.524219	3.449371	3.423458	5.145771	6.852903	9.140498	13.89530
Nonassoc. Gas Liquids (10^9 BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MGRNRVR.AGL

(from MGRNRVR.AGC) 11-Jul-1997

14:31:47 Run No. 1

I N P U T S U M M A R Y Project : Continuous-Type Accumulations Dependency = 0.60000

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Cloverly/Frontier, 3-740	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	27938.0	18368.2	8426.72	15150.0	23200.8	3542.4	63754.6	10^9 CF
(..\sw-wyo\3740.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	27938.0	18368.2	8426.72	15150.0	23200.8	3542.4	63754.6	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	419.071	275.523	126.400	227.250	348.012	533.136	956.320	10^6 BBL
Mesaverde, 3741	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	41366.2	16953.3	1764.9	28050.0	4074.9	52041.4	71888.8	10^9 CF
(..\sw-wyo\3741.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	41366.2	16953.3	1764.9	28050.0	4074.9	52041.4	71888.8	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	620.493	254.299	261.974	420.750	601.123	780.621	1078.33	10^6 BBL
Lewis, 3742	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	14252.1	6493.54	6281.00	9049.74	12900.1	18372.9	26530.0	10^9 CF
(..\sw-wyo\3742.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	14252.1	6493.54	6281.00	9049.74	12900.1	18372.9	26530.0	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	213.782	97.4031	94.2150	135.746	193.502	275.594	397.951	10^6 BBL
Lance/Fox Hills, 3743	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	8178.91	4900.52	2567.84	4698.44	7089.01	10424.4	17605.4	10^9 CF
(..\sw-wyo\3743.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	8178.91	4900.52	2567.84	4698.44	7089.01	10424.4	17605.4	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	81.7891	49.0052	25.6784	46.9844	70.8901	104.244	176.054	10^6 BBL
Fort Union, 3744	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	726.123	423.819	233.580	423.105	634.397	925.332	1540.05	10^9 CF
(..\sw-wyo\3744.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	726.123	423.819	233.580	423.105	634.397	925.332	1540.05	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	7.25123	4.23819	2.33580	4.23105	6.34397	9.25332	15.4005	10^6 BBL
MGRNRVR	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	92461.5	40121.6	43471.9	63898.3	85914.1	113319.	165069.	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	92461.5	40121.6	43471.9	63898.3	85914.1	113319.	165069.	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	1342.39	582.081	628.980	926.394	1247.51	1646.58	2398.41	10^6 BBL

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E S T I M A T E D R E S O U R C E S for M G R N R V R C : \ U N C O N V \ F E D C O N T I \ A G G - G E O G \ M G R N R V R . A G L C r o v e l l i & B a l a y

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	92.46153	40.12160	43.47196	63.89837	85.91412	113.3194	165.0693
Uncond Aggregate Potential	92.46153	40.12160	43.47196	63.89837	85.91412	113.3194	165.0693
Associated-Dissolved Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	92.46153	40.12160	43.47196	63.89837	85.91412	113.3194	165.0693
Uncond Aggregate Potential	92.46153	40.12160	43.47196	63.89837	85.91412	113.3194	165.0693
Nonassoc. Gas Liquids (10 ⁻⁹ BBL)							
Cond Aggregate Potential	1.342398	0.582081	0.628980	0.926394	1.247511	1.646581	2.398416
Uncond Aggregate Potential	1.342398	0.582081	0.628980	0.926394	1.247511	1.646581	2.398416

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UNCLE-AG 97.1 Crovelli & Bayay C:\UNCONV\FEDCONTI\AGG-GEOG\PDENVER.AGL (from PDENVER.GC) 11-Jul-1997 14:49:04 Run No. 1

IN PUT SUMMARY Project : Continuous-Type Accumulations Dependency = 0.30000

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
MNTOCDL	Oil	1.00000	0.00000	1.33216	0.38103	0.80749	1.06007	1.28079	1.54748	2.03151	10^6 BBL
	NA-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	AD-Gas	1.00000	0.00000	2.66432	0.76207	1.61499	2.12014	2.56159	3.09496	4.06303	10^9 CF
(mniocdl.agg)	Gas	1.00000	0.00000	2.66432	0.76207	1.61499	2.12014	2.56159	3.09496	4.06303	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
J Sandstone Deep Gas-(Wattenberg), 3906 (.\denver\3906.agg)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	41.5275	28.5608	12.2920	22.4869	34.2162	52.0638	95.2450	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	41.5275	28.5608	12.2920	22.4869	34.2162	52.0638	95.2450	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.00373	0.00257	0.00110	0.00202	0.00307	0.00468	0.00857	10^-6 BBL

PDENVER	Oil	1.00000	0.00000	1.33216	0.38103	0.80749	1.06007	1.28079	1.54748	2.03151	10^6 BBL
	NA-Gas	1.00000	0.00000	41.5275	28.5608	12.2920	22.4869	34.2162	52.0638	95.2450	10^9 CF
	AD-Gas	1.00000	0.00000	2.66432	0.76207	1.61499	2.12014	2.56159	3.09496	4.06303	10^9 CF
	Gas	1.00000	0.00000	44.1918	28.7986	13.9988	24.8198	37.0112	55.1588	98.4673	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.00373	0.00257	0.00110	0.00202	0.00307	0.00468	0.00857	10^-6 BBL

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E S T I M A T E D R E S O U R C E S f o r P D E N V E R C : \ U N C O N V \ F E D C O N T I \ A G G - G E O G \ P D E N V E R . A G L C r o v e l l i & B a l a y

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁹ BBL)							
Cond Aggregate Potential	0.0013332	0.000381	0.000807	0.001060	0.001281	0.001547	0.002032
Uncond Aggregate Potential	0.0013332	0.000381	0.000807	0.001060	0.001281	0.001547	0.002032
Nonassociated Gas (10 ¹² CF)							
Cond Aggregate Potential	0.041528	0.028561	0.012292	0.022487	0.034216	0.052064	0.095245
Uncond Aggregate Potential	0.041528	0.028561	0.012292	0.022487	0.034216	0.052064	0.095245
Associated-Dissolved Gas (10 ¹² CF)							
Cond Aggregate Potential	0.002664	0.000762	0.001615	0.002120	0.002562	0.003095	0.004063
Uncond Aggregate Potential	0.002664	0.000762	0.001615	0.002120	0.002562	0.003095	0.004063
Total Gas (10 ¹² CF)							
Cond Aggregate Potential	0.044192	0.028799	0.013999	0.024820	0.037011	0.055159	0.098467
Uncond Aggregate Potential	0.044192	0.028799	0.013999	0.024820	0.037011	0.055159	0.098467
Nonassoc. Gas Liquids (10 ⁹ BBL)							
Cond Aggregate Potential	0.000004	0.000003	0.000001	0.000002	0.000003	0.000005	0.000009
Uncond Aggregate Potential	0.000004	0.000003	0.000001	0.000002	0.000003	0.000005	0.000009

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MAUSTIN.AGL
 IN PUT SUMMARY Project : Continuous-Type Accumulations Dependency = 0.3765
 Component Resource U.P.P. Cutoff Mean S.D.
 ----- ----- ----- ----- -----
 Austin Mid-dip Oil -- Oil 1.00000 0.00000 13.7632 3.40955 8.94200 11.3317 13.3594 15.7498 19.9590 10^6 BBL
 Area 3 , 4749 NA-Gas 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 10^9 CP
 AD-Gas 1.00000 0.00000 33.0317 8.18292 21.4608 27.1962 32.0625 37.7996 47.9017 10^9 CF
 (..\gulf\4749.agg) Gas 1.00000 0.00000 33.0317 8.18292 21.4608 27.1962 32.0625 37.7996 47.9017 10^9 CF
 NA-Gas-Liq 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 10^6 BBL

 MAUSTIN Oil 1.00000 0.00000 13.7632 3.40955 8.94200 11.3317 13.3594 15.7498 19.9590 10^6 BBL
 NA-Gas 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 10^9 CP
 AD-Gas 1.00000 0.00000 33.0317 8.18292 21.4608 27.1962 32.0625 37.7996 47.9017 10^9 CF
 Gas 1.00000 0.00000 33.0317 8.18292 21.4608 27.1962 32.0625 37.7996 47.9017 10^9 CF
 NA-Gas-Liq 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 10^6 BBL

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E S T I M A T E D R E S O U R C E S for MAUSTIN C:\UNCONV\FEDCONTI\AGG-GEOG\MAUSTIN.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁹ BBL)							
Cond Aggregate Potential	0.013763	0.003410	0.008942	0.011332	0.013359	0.015750	0.019959
Uncond Aggregate Potential	0.013763	0.003410	0.008942	0.011332	0.013359	0.015750	0.019959
Nonassociated Gas (10 ¹² CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Associated-Dissolved Gas (10 ¹² CF)							
Cond Aggregate Potential	0.033032	0.008183	0.021461	0.027196	0.032063	0.037800	0.047902
Uncond Aggregate Potential	0.033032	0.008183	0.021461	0.027196	0.032063	0.037800	0.047902
Total Gas (10 ¹² CF)							
Cond Aggregate Potential	0.033032	0.008183	0.021461	0.027196	0.032063	0.037800	0.047902
Uncond Aggregate Potential	0.033032	0.008183	0.021461	0.027196	0.032063	0.037800	0.047902
Nonassoc. Gas Liquids (10 ⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

INPUT SUMMARY

Play Name	Province Name	Province #	Evaluator	Assessment Date
Cotton Valley Blanket Sandstones, 4923	LA/MS Salt Basins	49	Schenk	6/13/94

Play Type	Play Probability	Success Ratio	Scenario
Gas	1.000	1.000	1 scenario; 640 acres; Crovelli
Geologic Variables	F100	F95	F75
Oil EUR* (10^6 BBL)	0.00000	(0.00000)	0.00000
NA Gas EUR* (10^9 CF)	0.00000	0.00500	0.16500
Oil Cells Depth (10^3 Ft)	0.00000	(0.00000)	0.00000
Gas Cells Depth (10^3 Ft)	7.00000	(7.66666)	9.00000
Number of Untested Cells	350	(831)	(1433)
			1794
			(2129)
			(2465)
			2800

* EUR = Estimated Ultimate Recovery

Gas-Oil Ratio CF/BBL	Expected Liquids/Gas Ratio BBL/10^6 CP	Estimated % of resource in subplay
0.0000000	25.000	2.5000000

GEOLOGIC VARIABLES and PROBABILITIES OF OCCURRENCE

Cond.	# Cells	Mean	Std. Dev.	Resource	NGL	
	# Cells	1740.20	522.063	Oil	AD Gas	Total
Oil Cell Depth	0.00000	0.00000	Prob. Untested Cell has	0.0000	1.0000	1.0000
Gas Cell Depth	9.12708	1.06618	Cond. Play Prob.	0.0000	1.0000	1.0000
			Uncond. Play Prob.	0.0000	1.0000	1.0000
			Prob. Exceed Cutoff	0.0000	1.0000	1.0000
Play Potential Cutoffs		0.0000	0.0000	0.0000	0.0000	0.0000

UNCONVENTIONAL RESOURCES for Cotton Valley Blanket Sandstones, 4923 C:\UNCONV\FEDCONT\GULF\4923.LIS Crovelli & Balay

	Mean	Std. Dev.	F95	F75	F50	F25	F05
OIL (10 ⁶ BBL)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
NONASSOCIATED GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	1740.20	522.063	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.08669	0.14195	.....	.....	.....	.....	.....
Cond. Play Potential	150.864	45.6453	88.7422	118.269	144.400	176.304	234.965
Uncond. Play Potential	150.864	45.6453	88.7422	118.269	144.400	176.304	234.965
ASSOCIATED-DISSOLVED GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	0.00000	0.00000	0	0	0	0	0
Est. Ultimate Recovery	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Cond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Uncond. Play Potential	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL GAS (10 ⁻⁹ CF)							
No. Prod. Untested Cells	1740.20	522.063	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.08669	0.14195	.....	.....	.....	.....	.....
Cond. Play Potential	150.864	45.6453	88.7422	118.269	144.400	176.304	234.965
Uncond. Play Potential	150.864	45.6453	88.7422	118.269	144.400	176.304	234.965
LIQUIDS in NONASSOC. GAS (10 ⁶ BBL)							
No. Prod. Untested Cells	1740.20	522.063	.....	.....	.....	.....	.....
Est. Ultimate Recovery	0.00217	0.00355	.....	.....	.....	.....	.....
Cond. Play Potential	3.77161	1.14113	2.21856	2.95673	3.61000	4.40760	5.87413
Uncond. Play Potential	3.77161	1.14113	2.21856	2.95673	3.61000	4.40760	5.87413

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MBLKSHM.AGL (from MBLKSHM.AGC) 10-Jul-1997

I N P U T S U M M A R Y Project : Continuous-Type Accumulations Dependency = 0.1300 Run No. 1

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Antrim Shale - Undeveloped Area, 6320 (..\michigan\6320.ag-g)	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	1394.18	1212.68	306.029	634.043	1051.93	1745.24	3615.85	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	1394.18	1212.68	306.029	634.043	1051.93	1745.24	3615.85	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
MBLKSHM	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	1394.18	1212.68	306.029	634.043	1051.93	1745.24	3615.85	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	1394.18	1212.68	306.029	634.043	1051.93	1745.24	3615.85	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL

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E S T I M A T E D R E S O U R C E S f o r M B L K S H M C : \ U N C O N V \ F E D C O N T I \ A G G - G E O G \ M B L K S H M . A G L C r o v e l l i & B a l a y

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10 ¹² CF)							
Cond Aggregate Potential	1.394187	1.212686	0.306029	0.634043	1.051931	1.745241	3.615858
Uncond Aggregate Potential	1.394187	1.212686	0.306029	0.634043	1.051931	1.745241	3.615858
Associated-Dissolved Gas (10 ¹² CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10 ¹² CF)							
Cond Aggregate Potential	1.394187	1.212686	0.306029	0.634043	1.051931	1.745241	3.615858
Uncond Aggregate Potential	1.394187	1.212686	0.306029	0.634043	1.051931	1.745241	3.615858
Nonassoc. Gas Liquids (10 ⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\MBLKSHI.AGL

(from MBLKSHI.AGC) 11-Jul-1997 11:16:45 Run No. 1

I N P U T S U M M A R Y Project : Continuous-Type Accumulations Dependency = 0.5300

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
New Albany Shale Gas-, 6407	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^-6 BBL
NA-Gas		1.00000	0.00000	94.4475	53.1195	34.7517	57.8015	82.3208	117.241	195.003	10^-9 CF
AD-Gas		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^-9 CF
(..\appalach\6407.ag- g)	Gas	1.00000	0.00000	94.4475	53.1195	34.7517	57.8015	82.3208	117.241	195.003	10^-9 CF
NA-Gas-Liq		1.00000	0.00000	0.09444	0.05311	0.03475	0.05780	0.08232	0.11724	0.19500	10^-6 BBL
Devonian Black Shale-, 6604	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^-6 BBL
NA-Gas		0.50000	0.00000	41.6563	48.3111	0.00000	0.00000	0.00000	76.9400	128.352	10^-9 CF
AD-Gas		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^-9 CF
(..\appalach\6604.ag- g)	Gas	0.50000	0.00000	41.6563	48.3111	0.00000	0.00000	0.00000	76.9400	128.352	10^-9 CF
NA-Gas-Liq		0.50000	0.00000	0.00416	0.00483	0.00000	0.00000	0.00000	0.00769	0.01283	10^-6 BBL
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MBLKSHI	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^-6 BBL
NA-Gas		1.00000	0.00000	136.103	88.7462	43.4586	71.1384	100.208	181.948	299.216	10^-9 CF
AD-Gas		0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^-9 CF
Gas		1.00000	0.00000	136.103	88.7462	43.4586	71.1384	100.208	181.948	299.216	10^-9 CF
NA-Gas-Liq		1.00000	0.00000	0.09861	0.05583	0.03613	0.05960	0.08439	0.12358	0.20395	10^-6 BBL

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ESTIMATED RESOURCES for MBLKSHI C:\UNCONV\FEDCONTI\AGG-GEOG\MBLKSHI.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10 ¹² CF)							
Cond Aggregate Potential	0.136104	0.088746	0.043459	0.071138	0.100208	0.181948	0.299217
Uncond Aggregate Potential	0.136104	0.088746	0.043459	0.071138	0.100208	0.181948	0.299217
Associated-Dissolved Gas (10 ¹² CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10 ¹² CF)							
Cond Aggregate Potential	0.136104	0.088746	0.043459	0.071138	0.100208	0.181948	0.299217
Uncond Aggregate Potential	0.136104	0.088746	0.043459	0.071138	0.100208	0.181948	0.299217
Nonassoc. Gas Liquids (10 ⁹ BBL)							
Cond Aggregate Potential	0.000099	0.000056	0.000036	0.000060	0.000084	0.000124	0.000204
Uncond Aggregate Potential	0.000099	0.000056	0.000036	0.000060	0.000084	0.000124	0.000204

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\PAPPALCH.AGL

Project : Continuous-Type Accumulations

(from PAPPALCH.AGC) 11-Jul-1997

14:47:28

Run No. 1

Dependency = 0.1396

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
MBLKSHA	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	459.420	156.446	253.601	349.417	436.627	543.895	743.819	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(mbblksha.agg)	Gas	1.00000	0.00000	459.420	156.446	253.601	349.417	436.627	543.895	743.819	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
MCLINTON	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	918.500	272.226	549.738	725.047	879.265	1070.46	1415.91	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(mcclinton.agg)	Gas	1.00000	0.00000	918.500	272.226	549.738	725.047	879.265	1070.46	1415.91	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.38578	0.12387	0.21948	0.29738	0.36731	0.45369	0.61488	10^6 BBL
MUPDEVSS	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	733.421	217.590	446.880	580.245	696.268	855.045	1123.61	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(mupdevss.agg)	Gas	1.00000	0.00000	733.421	217.590	446.880	580.245	696.268	855.045	1123.61	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.09976	0.03234	0.05642	0.07668	0.09490	0.11745	0.15963	10^6 BBL
PAPPALCH	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	2111.34	428.790	1505.12	1814.76	2068.47	2362.34	2859.86	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	2111.34	428.790	1505.12	1814.76	2068.47	2362.34	2859.86	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.48555	0.13232	0.30222	0.39137	0.46849	0.56089	0.72694	10^6 BBL

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E S T I M A T E D R E S O U R C E S f o r P A P P A L C H C : \ U N C O N V \ F E D C O N T I \ A G G - G E O G \ P A P P A L C H . A G L C r o v e l l i & B a l a y

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10¹² CF)							
Cond Aggregate Potential	2.111342	0.428791	1.505122	1.814761	2.068473	2.362344	2.859864
Uncond Aggregate Potential	2.111342	0.428791	1.505122	1.814761	2.068473	2.362344	2.859864
Associated-Dissolved Gas (10¹² CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10¹² CF)							
Cond Aggregate Potential	2.111342	0.428791	1.505122	1.814761	2.068473	2.362344	2.859864
Uncond Aggregate Potential	2.111342	0.428791	1.505122	1.814761	2.068473	2.362344	2.859864
Nonassoc. Gas Liquids (10⁹ BBL)							
Cond Aggregate Potential	0.000486	0.000132	0.000302	0.000391	0.000468	0.000561	0.000727
Uncond Aggregate Potential	0.000486	0.000132	0.000302	0.000391	0.000468	0.000561	0.000727

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APPENDIX F

Geographic aggregations – region estimates of technically recoverable petroleum resources for continuous-type (unconventional) plays in sandstones, shales, and chalks on Federal Lands of the conterminous United States.

[The first page of an aggregation printout consists of the components to be aggregated (province estimates). The second page of the printout consists of the estimated petroleum resources for the aggregation (mean, standard deviation, and fractiles). Components are in the numerical order, as far as possible, of the plays from which they were derived.]

UNCLE-SC 97.1 Crovelli and Balay C:\UNCONV\FEDCONTI\WASH-ORE\503.SCL (from 503.SCC) 11-Jul-1997 14:43:59 Run No. 1

INPUT SUMMARY Project : Unconv

Scenario	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Columbia Basin, 503	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	3199.95	2448.66	831.799	1607.58	2541.27	4017.26	7764.00	10^9 CF
prob. = 0.3000 (503-160.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	3199.95	2448.66	831.799	1607.58	2541.27	4017.26	7764.00	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	31.9995	24.4866	8.31799	16.0758	25.4127	40.1726	77.6400	10^6 BBL
Columbia Basin, 503	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	5600.10	4284.68	1455.96	2813.66	4447.62	7030.45	13586.4	10^9 CF
prob. = 0.7000 (503-80.agg)	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	5600.10	4284.68	1455.96	2813.66	4447.62	7030.45	13586.4	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	56.0010	42.8468	14.5596	28.1366	44.4762	70.3045	135.864	10^6 BBL
Columbia Basin, 503	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	4880.06	3982.40	1120.42	2304.30	3783.17	6171.33	12396.2	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	4880.06	3982.40	1120.42	2304.30	3783.17	6171.33	12396.2	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	48.8006	39.8240	11.2042	23.0430	37.8317	61.7133	123.962	10^6 BBL

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F2

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10^9 BBL)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas (10^12 CF)							
Uncond Combined Potential	4.880060	3.982401	1.120428	2.304301	3.783171	6.171339	12.39622
Associated-Dissolved Gas (10^12 CF)							
Uncond Combined Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas (10^12 CF)							
Uncond Combined Potential	4.880060	3.982401	1.120428	2.304301	3.783171	6.171339	12.39622
Nonassoc. Gas Liquids (10^9 BBL)							
Uncond Combined Potential	0.048801	0.039824	0.011204	0.023043	0.037832	0.061713	0.123962

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\R3COLPLT.AGL

IN P U T S U M M A R Y Project : Continuous-Type Accumulations Dependency = 0.0000

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
PSANJUAN	Oil	1.00000	0.00000	75.5387	43.3182	27.2581	45.7336	65.5286	93.8914	157.531	10^6 BBL
	NA-Gas	1.00000	0.00000	8424.02	3412.45	4251.85	6075.27	7809.46	10087.5	14656.3	10^9 CF
(psanjuan.agg)	AD-Gas	1.00000	0.00000	37.7693	21.6591	13.6290	22.8668	32.7643	46.9457	78.7655	10^9 CF
	Gas	1.00000	0.00000	8461.79	3417.49	4265.48	6098.13	7847.73	10134.4	14735.1	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.362244	0.15406	0.17528	0.25574	0.33341	0.43648	0.64599	10^6 BBL
Fractured Interbed, - 2103	Oil	1.00000	0.00000	157.509	124.103	39.4433	77.4236	123.720	197.699	388.066	10^6 BBL
	NA-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
	AD-Gas	1.00000	0.00000	126.007	99.2827	31.5546	61.9389	98.9760	158.159	310.453	10^9 CF
(..\san-juan\2103.agg)	Gas	1.00000	0.00000	126.007	99.2827	31.5546	61.9389	98.9760	158.159	310.453	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
PUINPIC	Oil	1.00000	0.00000	32.8325	8.63654	20.7484	26.6689	31.7523	37.8047	48.5922	10^6 BBL
	NA-Gas	1.00000	0.00000	9715.09	2361.72	6483.89	8066.19	9421.54	11043.1	13939.6	10^9 CF
	AD-Gas	1.00000	0.00000	9.84946	2.59096	6.22453	8.00069	9.52571	11.3414	14.5776	10^9 CF
(puinpic.agg)	Gas	1.00000	0.00000	9724.94	2361.73	6491.94	8075.26	9431.56	11053.7	13951.3	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	56.4340	15.5653	35.4737	45.4981	54.2956	65.0297	84.6268	10^6 BBL
R3COLPLT	Oil	1.00000	0.00000	265.880	131.729	110.230	173.690	238.242	326.786	514.917	10^6 BBL
	NA-Gas	1.00000	0.00000	18139.1	4150.01	12194.6	15183.4	17682.2	20592.2	25639.3	10^9 CF
	AD-Gas	1.00000	0.00000	173.626	101.650	61.3436	103.893	149.836	216.095	365.985	10^9 CF
	Gas	1.00000	0.00000	18312.7	4155.34	12353.0	15353.7	17858.7	20772.4	25818.3	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	56.7962	15.5661	35.6490	45.7538	54.7762	65.4662	85.2728	10^6 BBL

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E S T I M A T E D R E S S O U R C E S for R3COLPLT C:\UNCONV\FEDCONTI\AGG-GEOG\R3COLPLT.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁹ BBL)							
Cond Aggregate Potential							
Cond Aggregate Potential	0.265880	0.131730	0.110231	0.173690	0.238243	0.326787	0.514918
Uncond Aggregate Potential	0.265880	0.131730	0.110231	0.173690	0.238243	0.326787	0.514918
Nonassociated Gas (10 ¹² CF)							
Cond Aggregate Potential							
Cond Aggregate Potential	18.13912	4.150011	12.19462	15.18347	17.68224	20.59224	25.63931
Uncond Aggregate Potential	18.13912	4.150011	12.19462	15.18347	17.68224	20.59224	25.63931
Associated-Dissolved Gas (10 ¹² CF)							
Cond Aggregate Potential							
Cond Aggregate Potential	0.173626	0.101651	0.061344	0.103893	0.149836	0.216095	0.365985
Uncond Aggregate Potential	0.173626	0.101651	0.061344	0.103893	0.149836	0.216095	0.365985
Total Gas (10 ¹² CF)							
Cond Aggregate Potential							
Cond Aggregate Potential	18.31274	4.155350	12.35303	15.35375	17.85876	20.77246	25.81837
Uncond Aggregate Potential	18.31274	4.155350	12.35303	15.35375	17.85876	20.77246	25.81837
Nonassoc. Gas Liquids (10 ⁹ BBL)							
Cond Aggregate Potential							
Cond Aggregate Potential	0.056796	0.015566	0.035649	0.045754	0.054776	0.065466	0.085273
Uncond Aggregate Potential	0.056796	0.015566	0.035649	0.045754	0.054776	0.065466	0.085273

UNCLE-AG 97.1 Crovelli & Bayay C:\UNCONV\FEDCONT\AGG-GEOG\R4RKYMTN.AGL (From R4RKYMTN.AGC) 11-Jul-1997 14:56:33 Run No. 1

I N P U T S U M M A R Y

Project : Continuous-Type Accumulations

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
PBKKN	Oil	1.00000	0.00000	38.1404	12.6697	22.2360	29.4931	35.9398	42.5945	61.6297	10^6 BBL
	NA-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	AD-Gas	1.00000	0.00000	33.4209	11.0908	19.4135	25.8178	31.5151	37.5202	53.9904	10^9 CF
(pbkkn.agg)	Gas	1.00000	0.00000	33.4209	11.0908	19.4135	25.8178	31.5151	37.5202	53.9904	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
MGRNRVR	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	92461.5	40121.6	43471.9	63898.3	85914.1	113319.	165069.	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(mgnrvr.agg)	Gas	1.00000	0.00000	92461.5	40121.6	43471.9	63898.3	85914.1	113319.	165069.	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	13422.39	582.081	628.980	926.394	1247.51	1646.58	2398.41	10^6 BBL
PDENVER	Oil	1.00000	0.00000	1.33216	0.38103	0.80749	1.06007	1.28079	1.54748	2.03151	10^6 BBL
	NA-Gas	1.00000	0.00000	41.5225	28.5608	12.2920	22.4869	34.2162	52.0638	95.2450	10^9 CF
	AD-Gas	1.00000	0.00000	2.66432	0.76207	1.61499	2.12014	2.56159	3.09496	4.06303	10^9 CF
(pdenver.agg)	Gas	1.00000	0.00000	44.1918	28.7986	13.9988	24.8198	37.0112	55.1588	98.4673	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.00373	0.00257	0.00110	0.00202	0.00307	0.00468	0.00857	10^6 BBL
MBIOGAS	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	7524.21	3449.37	3423.45	5145.77	6852.90	9140.49	13895.2	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(mbiogas.agg)	Gas	1.00000	0.00000	7524.21	3449.37	3423.45	5145.77	6852.90	9140.49	13895.2	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
R4RKYMTN	Oil	1.00000	0.00000	39.4725	12.6754	23.0435	30.5531	37.5823	44.1420	62.9205	10^6 BBL
	NA-Gas	1.00000	0.00000	100027.	40269.6	49047.6	71444.8	92790.0	120512.	175543.	10^9 CF
	AD-Gas	1.00000	0.00000	36.0853	11.1170	21.0285	28.1471	34.4858	40.6151	56.5932	10^9 CF
	Gas	1.00000	0.00000	100063.	40269.6	49078.2	71480.4	92828.1	120551.	175578.	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	1342.40	582.081	628.981	930.854	1231.60	1629.51	2398.42	10^6 BBL

ESTIMATED RESOURCES for R4RKYMTN C:\UNCONV\FEDCONTI\AGG-GEOG\R4RKYMTN.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10^9 BBL)							
Cond Aggregate Potential	0.039473	0.012675	0.023044	0.030553	0.037582	0.044142	0.062921
Uncond Aggregate Potential	0.039473	0.012675	0.023044	0.030553	0.037582	0.044142	0.062921
Nonassociated Gas (10^12 CF)							
Cond Aggregate Potential	100.0273	40.26961	49.04764	71.44482	92.79001	120.5124	175.5434
Uncond Aggregate Potential	100.0273	40.26961	49.04764	71.44482	92.79001	120.5124	175.5434
Associated-Dissolved Gas (10^12 CF)							
Cond Aggregate Potential	0.036085	0.011117	0.021029	0.028147	0.034486	0.040615	0.056593
Uncond Aggregate Potential	0.036085	0.011117	0.021029	0.028147	0.034486	0.040615	0.056593
Total Gas (10^12 CF)							
Cond Aggregate Potential	100.0634	40.26962	49.07827	71.48044	92.82816	120.5514	175.5780
Uncond Aggregate Potential	100.0634	40.26962	49.07827	71.48044	92.82816	120.5514	175.5780
Nonassoc. Gas Liquids (10^9 BBL)							
Cond Aggregate Potential	1.342402	0.582081	0.628981	0.930855	1.231603	1.629519	2.398424
Uncond Aggregate Potential	1.342402	0.582081	0.628981	0.930855	1.231603	1.629519	2.398424

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\R6GULF.AGL (from R6GULF.ACC) 11-Jul-1997 14:56:54 Run No. 1

I N P U T S U M M A R Y		Project : Continuous-Type Accumulations						Dependency = 0.0000			
Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
MAUSTIN	Oil	1.00000	0.00000	13.7632	3.40955	8.94200	11.3317	13.3594	15.7498	19.9590	10^6 BBL
	NA-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	AD-Gas	1.00000	0.00000	33.0317	8.18292	21.4608	27.1962	32.0625	37.7996	47.9017	10^9 CF
(maustin.agg)	Gas	1.00000	0.00000	33.0317	8.18292	21.4608	27.1962	32.0625	37.7996	47.9017	10^9 CF
	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
Cotton Valley Blanke-	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
t Sandstones, 4923	NA-Gas	1.00000	0.00000	150.864	45.6453	88.7422	118.269	144.399	176.304	234.965	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(..\gulf\4923.agg)	Gas	1.00000	0.00000	150.864	45.6453	88.7422	118.269	144.399	176.304	234.965	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	3.77161	1.14113	2.21855	2.95672	3.60999	4.40760	5.87412	10^6 BBL
R6GULF	Oil	1.00000	0.00000	13.7632	3.40955	8.94200	11.3317	13.3594	15.7498	19.9590	10^6 BBL
	NA-Gas	1.00000	0.00000	150.864	45.6453	88.7422	118.269	144.399	176.304	234.965	10^9 CF
	AD-Gas	1.00000	0.00000	33.0317	8.18292	21.4608	27.1962	32.0625	37.7996	47.9017	10^9 CF
	Gas	1.00000	0.00000	183.896	46.3729	118.522	150.817	178.314	210.823	268.268	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	3.77161	1.14113	2.21855	2.95672	3.60999	4.40760	5.87412	10^6 BBL

E S T I M A T E D R E S O U R C E S f o r R6GULF C:\UNCONV\FEDCONTI\AGG-GEOG\R6GULF.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.013763	0.003410	0.008942	0.011332	0.013359	0.015750	0.019959
Uncond Aggregate Potential	0.013763	0.003410	0.008942	0.011332	0.013359	0.015750	0.019959
Nonassociated Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	0.150864	0.045645	0.088742	0.118269	0.144400	0.176304	0.234965
Uncond Aggregate Potential	0.150864	0.045645	0.088742	0.118269	0.144400	0.176304	0.234965
Associated-Dissolved Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	0.033032	0.008183	0.021461	0.027196	0.032063	0.037800	0.047902
Uncond Aggregate Potential	0.033032	0.008183	0.021461	0.027196	0.032063	0.037800	0.047902
Total Gas (10 ⁻¹² CF)							
Cond Aggregate Potential	0.183896	0.046373	0.118523	0.150818	0.178314	0.210823	0.268269
Uncond Aggregate Potential	0.183896	0.046373	0.118523	0.150818	0.178314	0.210823	0.268269
Nonassoc. Gas Liquids (10 ⁻⁹ BBL)							
Cond Aggregate Potential	0.003772	0.001141	0.002219	0.002957	0.003610	0.004408	0.005874
Uncond Aggregate Potential	0.003772	0.001141	0.002219	0.002957	0.003610	0.004408	0.005874

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UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\R8EASTRN.AGL

I N P U T S U M M A R Y Project : Continuous-Type Accumulations

Dependency = 0.1488

Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
PAPPALCH	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	2111.34	428.790	1505.12	1814.76	2068.47	2362.34	2859.86	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(pappalch.agg)	Gas	1.00000	0.00000	2111.34	428.790	1505.12	1814.76	2068.47	2362.34	2859.86	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.48555	0.13232	0.30222	0.39137	0.46849	0.56089	0.72694	10^6 BBL
MBLKSHI	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	136.103	88.7462	43.4586	71.1384	100.208	181.948	299.216	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	136.103	88.7462	43.4586	71.1384	100.208	181.948	299.216	10^9 CF
(mblkshi.agg)	NA-Gas-Liq	1.00000	0.00000	0.09861	0.05583	0.03613	0.05960	0.08439	0.12358	0.20395	10^6 BBL
MBLKSHM	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	1394.18	1212.68	306.029	634.043	1051.93	1745.24	3615.85	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	1394.18	1212.68	306.029	634.043	1051.93	1745.24	3615.85	10^9 CF
(mblkshm.agg)	NA-Gas-Liq	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
R8EASTRN	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	3641.63	1363.98	1936.22	2692.45	3401.25	4289.53	6150.82	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
	Gas	1.00000	0.00000	3641.63	1363.98	1936.22	2692.45	3401.25	4289.53	6150.82	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.58416	0.15108	0.37450	0.47717	0.56513	0.67043	0.85780	10^6 BBL

E S T I M A T E D R E S O U R C E S for R8EASTRN C: \UNCONV\FEDCONTI\AGG-GEOG\R8EASTRN.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil							
(10 ⁹ BBL)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Nonassociated Gas							
(10 ¹² CF)							
Cond Aggregate Potential	3.641633	1.363982	1.936223	2.692457	3.401250	4.289533	6.150822
Uncond Aggregate Potential	3.641633	1.363982	1.936223	2.692457	3.401250	4.289533	6.150822
Associated-Dissolved Gas							
(10 ¹² CF)							
Cond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Uncond Aggregate Potential	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Total Gas							
(10 ¹² CF)							
Cond Aggregate Potential	3.641633	1.363982	1.936223	2.692457	3.401250	4.289533	6.150822
Uncond Aggregate Potential	3.641633	1.363982	1.936223	2.692457	3.401250	4.289533	6.150822
Nonassoc. Gas Liquids							
(10 ⁹ BBL)							
Cond Aggregate Potential	0.000584	0.000151	0.000375	0.000477	0.000565	0.000670	0.000858
Uncond Aggregate Potential	0.000584	0.000151	0.000375	0.000477	0.000565	0.000670	0.000858

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APPENDIX G

Geographic aggregation – nation estimates of technically recoverable petroleum resources for continuous-type (unconventional) plays in sandstones, shales, and chalks on Federal Lands of the conterminous United States.

[The first page of the aggregation printout consists of the components to be aggregated (region estimates). The second page of the printout consists of the estimated petroleum resources for the aggregation (mean, standard deviation, and fractiles). Components are in the numerical order, as far as possible, of the plays from which they were derived.]

UNCLE-AG 97.1 Crovelli & Balay C:\UNCONV\FEDCONTI\AGG-GEOG\NATION.AGL (from NATION.AGC) 11-Jul-1997 15:00:37 Run No. 1

I N P U T S U M M A R Y		Project : Continuous-Type Accumulations							Dependency = 0.0000		
Component	Resource	U.P.P.	Cutoff	Mean	S.D.	F95	F75	F50	F25	F05	Units
Columbia Basin, 503	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	4880.06	3982.40	1120.42	2304.30	3783.17	6171.33	12396.2	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(..\wash-ore\503.agg-)	Gas	1.00000	0.00000	4880.06	3982.40	1120.42	2304.30	3783.17	6171.33	12396.2	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	48.8006	39.8240	11.2042	23.0430	37.8317	61.7133	123.962	10^6 BBL
R3COLPLT	Oil	1.00000	0.00000	265.880	131.729	110.230	173.690	238.242	326.786	514.917	10^6 BBL
	NA-Gas	1.00000	0.00000	18139.1	4150.01	12194.6	15183.4	17652.2	20592.2	25639.3	10^9 CF
	AD-Gas	1.00000	0.00000	173.626	101.650	61.3436	103.893	149.836	216.095	365.985	10^9 CF
(r3colplt.agg)	Gas	1.00000	0.00000	18312.7	4155.34	12353.0	15353.7	17858.7	20772.4	25818.3	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	56.7962	15.5661	35.6490	45.7538	54.7762	65.4662	85.2728	10^6 BBL
R4RKYMTN	Oil	1.00000	0.00000	39.4725	12.6754	23.0435	30.5531	37.5823	44.1420	62.9205	10^6 BBL
	NA-Gas	1.00000	0.00000	100027.	40269.6	49047.6	71444.8	92790.0	120512.	175543.	10^9 CF
	AD-Gas	1.00000	0.00000	36.0853	11.1170	21.0285	28.1471	34.4858	40.6151	56.5932	10^9 CF
(r4rkymtn.agg)	Gas	1.00000	0.00000	100063.	40269.6	49078.2	71480.4	92828.1	120551.	175578.	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	1342.40	582.081	628.981	930.854	1231.60	1629.51	2398.42	10^6 BBL
R6GULF	Oil	1.00000	0.00000	13.7632	3.40955	8.94200	11.3317	13.3594	15.7498	19.9590	10^6 BBL
	NA-Gas	1.00000	0.00000	150.864	45.6453	88.7422	118.269	144.399	176.304	234.965	10^9 CF
	AD-Gas	1.00000	0.00000	33.0317	8.18292	21.4608	27.1962	32.0625	37.7996	47.9017	10^9 CF
(rgulf.agg)	Gas	1.00000	0.00000	183.896	46.3729	118.522	150.817	178.314	210.523	268.268	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	3.77161	1.14113	2.21855	2.95672	3.60999	4.40760	5.87412	10^6 BBL
R8EASTRN	Oil	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^6 BBL
	NA-Gas	1.00000	0.00000	3641.63	1363.98	1936.22	2692.45	3401.25	4289.53	6150.82	10^9 CF
	AD-Gas	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	10^9 CF
(r8eastrn.agg)	Gas	1.00000	0.00000	3641.63	1363.98	1936.22	2692.45	3401.25	4289.53	6150.82	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	0.58416	0.15108	0.37450	0.47717	0.56513	0.67043	0.85780	10^6 BBL
NATION	Oil	1.00000	0.00000	319.116	132.382	153.032	225.288	294.759	385.653	567.742	10^6 BBL
	NA-Gas	1.00000	0.00000	126838.	40701.1	72163.3	97783.5	120773.	149168.	202127.	10^9 CF
	AD-Gas	1.00000	0.00000	242.743	102.583	114.780	170.106	223.596	293.907	435.576	10^9 CF
	Gas	1.00000	0.00000	127081.	40701.7	72381.5	98025.4	121025.	149422.	202361.	10^9 CF
	NA-Gas-Liq	1.00000	0.00000	1452.35	583.650	713.084	1038.05	1347.60	1749.46	2546.75	10^6 BBL

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E S T I M A T E D R E S O U R C E S f o r N A T I O N C:\UNCONV\FEDCONTI\AGG-GEOG\NATION.AGL Crovelli & Balay

	Mean	Std Dev	F95	F75	F50	F25	F05
Oil (10 ⁹ BBL)							
Cond Aggregate Potential	0.319116	0.132382	0.153033	0.2225289	0.294760	0.385653	0.567742
Uncond Aggregate Potential	0.319116	0.132382	0.153033	0.225289	0.294760	0.385653	0.567742
Nonassociated Gas (10 ¹² CF)							
Cond Aggregate Potential	126.8390	40.70119	72.16337	97.78358	120.7733	149.1681	202.1273
Uncond Aggregate Potential	126.8390	40.70119	72.16337	97.78358	120.7733	149.1681	202.1273
Associated-Dissolved Gas (10 ¹² CF)							
Cond Aggregate Potential	0.2422743	0.102584	0.114780	0.170107	0.223597	0.293907	0.435576
Uncond Aggregate Potential	0.2422743	0.102584	0.114780	0.170107	0.223597	0.293907	0.435576
Total Gas (10 ¹² CF)							
Cond Aggregate Potential	127.0817	40.70173	72.38159	98.02545	121.0258	149.4230	202.3616
Uncond Aggregate Potential	127.0817	40.70173	72.38159	98.02545	121.0258	149.4230	202.3616
Nonassoc. Gas Liquids (10 ⁹ BBL)							
Cond Aggregate Potential	1.452354	0.583651	0.713085	1.038059	1.347608	1.749466	2.546751
Uncond Aggregate Potential	1.452354	0.583651	0.713085	1.038059	1.347608	1.749466	2.546751

APPENDIX H

Aggregation scheme for continuous-type (unconventional) plays in sandstones, shales, and chalks on Federal Lands of the conterminous United States.

Appendix H
Aggregation Scheme for Continuous-type Plays in Sandstones, Shales, and Chalks
[Extra aggregation of PPINCE and PUINTA with output PUINPIC]

Reg.	Play	%	Play	App.C	App.D		App.E		App.F		App. G	
					No.	Fed.	Scenario	Megaplay Combin.	Province*		Region	
									Input	Output	Input	Output
2	412	NA										
	503	40	2	x								503
3	2007	55	1		2007	MMSVDP	MMSVDP	PPINCE*				
	2009	35	1					2009	PPINCE*			
	2010	55	1		2010	MMSVDP			PUINPIC*			
											R3COLPLT	R3COLPLT
	2015	80	2	x	2015	MWASATCH	MWASATCH	PUINTA*				
	2016	75	2	x	2016	MWASATCH						
	2018	60	1		2018	MMSVDU	MMSVDU	PUINTA*				
	2020	2	1		2020	MMSVDU						
	2103	65	1				x			2103		
	2205	40	1		2205	MSNUNGAS						
	2208	40	1					2208	PSANJUAN	PSANJUAN		
	2209	40	1		2209	MSNUNGAS	MSNUNGAS					
	2211	40	1		2211	MSNUNGAS						
4	2703	NA										
	2804	10	1					2804	PBKON			
	2810	20	1		2810	MBIOGAS						
	2811	20	1		2811	MBIOGAS	MBIOGAS		MBIOGAS			
	2812	15	1		2812	MBIOGAS					R4KYMNTN	R4KYMNTN
	3110	40	1		3110	MBK0NW						
	3111	10	1		3111	MBK0NW	MBK0NW	PBK0N	PBK0N			
	3112	5	1		3112	MBK0NW						
	3113	2	1		3113	MBIOGAS						
	3308	NA										NATION
	3311	NA										
	3404	NA										
	3505	NA										
	3740	75	2	x	3740	MGRNRVR						
	3741	80	2	x	3741	MGRNRVR						
	3742	75	2	x	3742	MGRNRVR	MGRNRVR	MGRNRVR	MGRNRVR			
	3743	80	2	x	3743	MGRNRVR						
	3744	65	2	x	3744	MGRNRVR						
	3803	NA										
	3904	0										
	3906	5	1					3906				
	3911	NA							PDENVER	PDENVER		
	3920	0										
	3921	5	1		3921	MNI0C0OL	MNI0C0OL					
5	4503	NA										
6	4747	0										
	4748	0										
	4749	7	1	P	MAUSTIN		4749	MAUSTIN	MAUSTIN	R6GULF	R6GULF	
	4923	2.5	1		4923	4923	4923	4923	4923			
7	5811	NA										
8	6319	0										
	6320	10	1		6320	MBLKSHM	MBLKSHM	MBLKSHM	MBLKSHM			
	6407	5	1		6407	MBLKSHI	MBLKSHI	MBLKSHI	MBLKSHI			
	6604	3	1		6604	MBLKSHI						R8EASTRN
	6728	3	1		6728	MCLINTON						
	6729	3	1		6729	MCLINTON	MCLINTON	PAPPALCH				
	6730	1	1		6730	MCLINTON						R8EASTRN
	6731	NA										
	6733	5	1		6733	MUPDEVSS	MUPDEVSS	PAPPALCH	PAPPALCH			
	6734	5	1		6734	MUPDEVSS						
	6735	5	1		6735	MUPDEVSS						
	6736	NA										
	6740	3	2	x	6740	MBLKSHA	MBLKSHA	PAPPALCH				
	6741	3	1		6741	MBLKSHA						
	6742	3	1		6742	MBLKSHA						
	6743	NA										

APPENDIX I

Play names and numbers for continuous-type (unconventional) plays in sandstones, shales, and chalks on Federal Lands of the conterminous United States.

Appendix I
 Continuous-Type Plays In
 Sandstones, Shales, and Chalks by
 Region, Province, and Number

Region No.	Prov. No.	Play No.	Play Name
2	4	412	Willamette - Puget Sound Basin-Centered Gas
2	5	503	Columbia Basin - Basin-Centered Gas
2	14	1408	Deep, Overpressured Fractured Rocks of the Central Syncline
3	20	2007	Tight Gas Piceance Mesaverde Williams Fork
3	20	2009	Cretaceous Self-Sourced Fractured Shales Oil
3	20	2010	Tight Gas Piceance Mesaverde Iles
3	20	2015	Tight Gas Uinta Tertiary East
3	20	2016	Tight Gas Uinta Tertiary West
3	20	2018	Basin Flank Uinta Mesaverde
3	20	2020	Deep Synclinal Uinta Mesaverde
3	21	2103	Fractured Interbed
3	22	2205	Dakota Central Basin Gas
3	22	2208	Mancos Fractured Shale
3	22	2209	Central Basin Mesaverde Gas
3	22	2211	Pictured Cliffs Gas
4	27	2703	Cone Calcareous Member, Marias River Shale
4	28	2804	Bakken Shale Fracture Systems
4	28	2810	Northern Great Plains Biogenic Gas, High Potential
4	28	2811	Analog)
4	28	2812	Northern Great Plains Biogenic Gas, Low Potential
4	31	3110	Bakken Fairway
4	31	3111	Bakken Intermediate
4	31	3112	Bakken Outlying
4	31	3113	Southern Williston Basin Margin - Niobrara Shallow Biogenic
4	33	3308	Mowry Fractured Shale
4	33	3311	Niobrara Fractured Shale
4	34	3404	Basin-Center Gas
4	35	3505	Basin-Center Gas
4	37	3740	Greater Green River Basin - Cloverly-Frontier
4	37	3741	Greater Green River Basin - Mesaverde
4	37	3742	Greater Green River Basin - Lewis
4	37	3743	Greater Green River Basin - Fox Hills-Lance
4	37	3744	Greater Green River Basin - Fort Union
4	38	3803	Upper Cretaceous Niobrara Fractured Shale Oil
4	39	3904	Greater Wattenberg Codell/Niobrara Oil and Gas
4	39	3906	J Sandstone Deep Gas (Wattenberg)
4	39	3911	Fractured Shale - Pierre
4	39	3920	Fractured Niobrara - Greater Silo/Dale Salt-Edge Oil
4	39	3921	Fractured Niobrara - Greater Northern Denver Basin Oil
5	45	4503	Mississippian Barnett Shale
6	47	4747	Austin Chalk-Pearsall
6	47	4748	Austin Chalk-Giddings
6	47	4749	Austin Chalk-Outlying
6	49	4923	Cotton Valley Blanket Sandstones Gas
7	58	5811	Woodford/Chattanooga/Arkansas Novaculite of Midcontinent
8	63	6319	Antrim Shale Gas, Developed Area
8	63	6320	Antrim Shale Gas, Undeveloped Area
8	64	6407	Illinois Basin - New Albany Shale Gas
8	66	6604	Devonian Black Shale Gas
8	67	6728	Clinton/Medina Sandstone Gas High Potential
8	67	6729	Clinton/Medina Sandstone Gas Medium Potential
8	67	6730	Clinton/Medina Sandstone Gas Medium-Low Potential
8	67	6731	Clinton/Medina Sandstone Gas Low Potential
8	67	6733	Upper Devonian Sandstone Gas High Potential
8	67	6734	Upper Devonian Sandstone Gas Medium Potential
8	67	6735	Upper Devonian Sandstone Gas Medium-Low Potential
8	67	6736	Upper Devonian Sandstone Gas Low Potential
8	67	6740	Devonian Black Shale - Greater Big Sandy
8	67	6741	Devonian Black Shale - Greater Siltstone Content
8	67	6742	Devonian Black Shale - Lower Thermal Maturity
8	67	6743	Devonian Black Shale - Undeveloped NE Ohio and Western Pennsylvania